LYNX Blue Line Extension

(Northeast Corridor)

Light Rail Project

Contract #: 08-477

WBS #: 6.22

Secondary and Cumulative Effects Assessment Technical Memorandum

Prepared by:

STV/Ralph Whitehead Associates

1000 W. Morehead Street, Suite 200
Charlotte, NC 28208

Prepared for:
City of Charlotte
Charlotte Area Transit System

Project #: 2513745
August 24, 2010

Rev. 00

TABLE OF CONTENTS

Tables

Figures

1.0 INTRODUCTION

This Technical Memorandum assesses the secondary (indirect) effects and cumulative (incremental) effects of the proposed LYNX Blue Line Extension Northeast Corridor Light Rail Project (LYNX BLE) Light Rail Alternative and the Light Rail Alternative – Sugar Creek Design Option when added to the past, present and reasonably foreseeable future actions of related projects in the study area. This document also includes a discussion of the recommended mitigation measures associated with the implementation of the proposed LYNX BLE and the Light Rail Alternative – Sugar Creek Design Option. The No-Build Alternative is not included in this assessment, as there would not be any actions likely to result in secondary or cumulative effects.

1.1 Legal and Regulatory Context

The evaluation of secondary and cumulative effects is based on federal and state laws, regulations, and guidelines. The Council of Environmental Quality (CEQ) regulations (40 CFR Sections 1500-1508) implement the procedural provisions the National Environmental Policy Act (NEPA) of 1969, as amended. The CEQ regulations require federal agencies to consider the potential for secondary and cumulative effects from a proposed project. These regulations also define the concepts of secondary and cumulative effects.

In addition, the assessment of secondary and cumulative effects is also a requirement of the North Carolina State Environmental Policy Act (SEPA) of 1976. North Carolina SEPA of 1976 (NCGS 113A), as amended, specifically refers to indirect and cumulative effects. These references are published in the North Carolina Administrative Code (NCAC) under the General Provisions (1 NCAC 25.0108). North Carolina uses the same definitions of indirect and cumulative effects as the federal government defines in NEPA.

1.1.1 Secondary Effects

The CEQ Regulations (40 CFR Section 1508.8) define “effects” as direct and secondary (indirect) effects:

- Direct Effects: Effects which are caused by the [proposed] action and occur at the same time and place (40 CFR 1508.8 (a)).
- Indirect Effects: Effects which are caused by the [proposed] action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related to effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8 (b)).

The terms “effects” and “impacts” are considered synonymous, as used in the CEQ regulations. For the purpose of this technical report, “indirect effects” are referred to herein as “secondary effects.” An example of a secondary effect is when a bypass is built around a town and commercial development ensues at the interchange that would not have otherwise occurred without the construction of the bypass. The commercial development is therefore considered a secondary effect of the construction of the bypass.

1.1.2 Cumulative Effects

The CEQ defines the term cumulative impact as: the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

In the simplest terms, analyzing cumulative effects means considering, and accounting for, the impacts of a proposed action in the context of everything else that is going on, has gone on, or probably will go on in the vicinity of the proposed project. Once the effects have been determined, appropriate mitigation strategies can be defined to wholly or partially manage the effects contributed by the proposed project.

An example of cumulative effects would be the construction of a new bridge, a gas station and a 60-lot residential subdivision. All of which would cause the removal of nine acres of wetlands and each project would need to mitigate its proportional impact on the nine acres of wetlands. When looked at individually, each individual project impacts on wetlands seem minor, but when looked at in total, the wetland loss is much more significant.

1.2 Methodology

The following resources were used to select methods for analyzing potential indirect and cumulative effects:

- *Guidance for Assessing Indirect and Cumulative Impacts of Transportation Projects in North Carolina*. NCDOT. (November 2001).
- *Considering Cumulative Effects under the National Environmental Policy Act*. CEQ Guidance. (1997).
- *Interim Guidance: Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process*. FHWA. (January 2003).

The following reports were used for assessing potential indirect and cumulative effects:

- The *Charlotte Northeast Corridor TOD Station Analysis* Robert Charles Lesser & Co., LLC. (September 22, 2005);
- Other Draft EIS technical reports prepared for the proposed project; and,
- Non project-related studies uncovered as part of a literature review.

1.2.1 Study Areas

Study areas were identified for considering a full range of potential secondary and cumulative effects. The study area definition considered several factors, including political/geographic boundaries (i.e. planning corridor districts and census tracts), commuteshed, growth boundaries/service area limits, watersheds, and interviews with planners with substantial knowledge of the area. Local representatives from the Charlotte-Mecklenburg Planning Department (Planning) and Charlotte Area Transit System (CATS) assisted in defining this area by responding to preliminary mapping presented at an interview (April 20, 2009), and by answering questions about potential project-induced changes in the area.

1.2.1.1 Future Land Use Study Area

The Future Land Use Study Area (FLUSA), which is depicted in Figure 1a-b, is where there is potential for land use changes with and without the Light Rail Alternative and the potential for induced development. The FLUSA is not necessarily the extent or exact location where indirect effects are likely to occur. Based on a field review of local conditions, interviews with local representatives, and professional judgment, this area was determined large enough to encompass potential indirect and cumulative effects resulting from the LYNX BLE.

For this project, the area for assessing potential indirect effects was identified within an area surrounding and including the Northeast Corridor. The northwestern and southeastern edges of the FLUSA are defined by the existing railroad tracks, as it is assumed that the tracks pose a physical barrier for land use changes associated with the proposed project. Existing roadways and neighborhood boundaries were considered in delineating the geographic extent of project-related land use changes to the northeastern and southwestern sides of the corridor. Although I-85 could act as a physical barrier for land use changes associated with the project, the FLUSA was delineated beyond the interstate because of available/developable land and the proximity and connection to future I-485. The FLUSA's eastern extent is defined by the Cabarrus County/Mecklenburg County Line.

1.2.1.2 Demographic Area

A demographic analysis area was established to analyze the population growth trends for the area encompassing the FLUSA. This geographic boundary is based on the outer limits of Census tracts that are located partially or entirely within the Northeast Corridor. As census data was used in determining population growth trends for the general area, the boundaries of the Demographic Area (DA) follow census track lines and therefore go beyond the FLUSA. The demographic area consists of the 29 census tracts (2000) listed in Table 1-1 and shown in Figure 2.

Table 1-1
Demographic Area

2000 Demographic Area Census Tracts	Extent of Census Tract Located Partially or Entirely in the Northeast Corridor	Does Census Tract only Touch/Share Boundary with the Northeast Corridor?
1.00	Partially	No
5.00	Partially	No
6.00	Partially	No
7.00	Entirely	No
8.00	Partially	Yes
9.00	Entirely	No
10.00	Partially	Yes
13.00	Partially	No
14.00	Entirely	No
15.03	Partially	Yes
15.04	Partially	No
15.05	Entirely	No
15.06	Entirely	No
49.00	Partially	Yes
51.00	Partially	Yes
52.00	Entirely	No
53.01	Entirely	No
53.03	Entirely	No
53.04	Entirely	No
54.02	Partially	Yes
55.04	Partially	Yes
55.05	Partially	No
55.06	Partially	No
55.07	Partially	No
56.03	Entirely	No
56.04	Entirely	No
56.05	Entirely	No
56.06	Partially	No
56.07	Partially	No

1.2.1.3 Project Impact Area

The Project Impact Area (PIA), shown in Figure 1a-b, is the area having the most potential for project-induced effects such as changes in land use and density. Project-induced development and/or redevelopment would be focused specifically around proposed station locations. These areas are either targeted for TOD, contain parcels slated for non-TOD at this time, or would be susceptible to changes due to the location of proposed stations. The area within ½-mile radius of the proposed stations is most likely to experience the greatest indirect effects.

The Federal Transit Administration (FTA) considers ½-mile to be a safe and convenient distance to walk to public transit. Because of the accessibility and walkability, transit stations often become focused development areas that are expected to experience effects as a result of a transit project. TOD focuses on creating compact neighborhoods with housing, jobs, shopping, community services, and recreational opportunities all within a ½-half mile walking distance of a transit station. Indirect effects outside of this area are essentially speculation, and are not reasonably foreseeable. Furthermore, it is assumed that impacts outside of this area may not likely be affected by project implementation.

The PIA boundary to the southwest includes the densely developed Center City area. This area would not likely experience new project-induced growth, but would most likely continue to experience public and private reinvestment through infill development, revitalization, and/or redevelopment. The PIA encompasses the area around the 13 proposed Light Rail Alternative stations and the two Light Rail Alternative – Sugar Creek Design Option stations:

1. 9th Street Station
2. Parkwood Station
3. 25th Street Station
4. 36th Street Station
5. Sugar Creek Station
6. Sugar Creek Station (Sugar Creek Design Option)
7. Old Concord Road Station
8. Old Concord Road Station (Sugar Creek Design Option)
9. Tom Hunter Station
10. University City Blvd. Station
11. McCullough Station
12. JW Clay Blvd. Station
13. UNC Charlotte Station
14. Mallard Creek Church Station
15. I-485/N. Tryon Station

1.2.2 Analysis Time Frame

This analysis considers past activities, present activities, and future activities. Therefore, the timeframe for the analysis includes population trends from 1980 to present, as well as projections through 2030. The projection year 2030 was determined to be a suitable analysis timeframe, as it is the forecast year of the proposed LYNX BLE and at the time of this analysis, it was also the horizon year for the Mecklenburg-Union Metropolitan Planning Organization's (MUMPO's) *Long Range Transportation Plan* (LRTP). On April 28, 2010, the Federal Highway Administration approved the *2035 LRTP*.

1.2.3 Impact Assessment

The potential for impacts is expressed quantitatively or with the following qualitative terms:

- No impact: This category applies if the alternative is not expected to result in indirect secondary effects or induced growth. Positive impacts, such as improved mobility and transit accessibility, may also occur and are represented as no impact. This category also applies if the induced growth is likely to occur but that this growth remains consistent with local land use plans. For cumulative impacts, this category applies if the past, present and future actions within the corridor by all parties would not collectively effect a resource or a community of concern.

- Potential impact: This impact category applies if the project is expected to result in induced growth as a secondary effect of the project that is not consistent with local land use plans. This category applies if there is a relative contribution of the proposed action that, when combined with other similar actions, represents a collective impact on a resource or a community of concern.

- Potentially significant impact: This category applies if the alternative would likely result in substantial changes that represent an "adverse impact" to the resources as a result of secondary or cumulative actions. An example of such an adverse impact would be the increase in densities beyond the ability to provide local infrastructure and community services. In some cases the impacts might not be fully addressed through the proposed mitigation. Significant impacts could include significant elimination of resources, such as parks or historic resources, within the project corridor. Potentially significant impacts also include adverse impacts resulting from multiple individual actions that would collectively negatively have an adverse impact to a resource or a community of concern, such as, multiple construction projects occurring within the same time period that each individually result in impacts that cumulatively hinder the resource.

2.0 AFFECTED ENVIRONMENT

This section discusses baseline conditions for the affected environment, including general trends and community goals. Areas discussed include location influences, demographic trends, planning/policy goals, future development trends, notable resources, and air quality. The transportation and land use planning goals provide a platform for assessing the proposed project's potential for secondary and cumulative effects.

The Noell Consulting Group's report, *City of Charlotte Estimated Development Potential for Transit Corridors and Activity Centers – 2008-2035* (April 2009) is summarized in the following sections and is incorporated by reference. The report documents an analysis of long-term growth trends in Mecklenburg County and identifies the amount of development that can be expected to occur in transit corridors and key activity centers in the next two decades and beyond. The analysis examined the 41 existing and planned transit stations along the South, North, Northeast, and Southeast transit corridors; nine activity centers (Center City, Northlake, University Research Park, Cotswold, Southpark, Ballantyne, Coliseum, Whitehall, and Steel Creek); and three planned streetcar corridors (Central, Beatties Ford, and Wilkinson Boulevard).

2.1 Regional Location Influences and Implications

Center City Charlotte is where the existing LYNX Blue Line terminates and where the proposed LYNX BLE would begin. It is the region's largest employment center, housing workers, residences, office space, retail space, and numerous entertainment, recreational, institutional/educational, and cultural destinations. The proposed LYNX BLE Northeast Corridor contains the North Davidson "NoDa" Historic Arts District, as well as the University City employment center. The University City area includes large employment complexes, medical facilities, and the University of North Carolina at Charlotte (UNC Charlotte) main campus. These destinations, as well as the corridor's connection to other corridors and activity centers, will continue to influence growth attractiveness and development potential within the Northeast Corridor through 2030.

The Noelle report concludes that Mecklenburg County will become increasingly urbanized through the next two decades and beyond with heavy emphasis on intensifying residential and commercial uses in key activity centers and in the four major transit corridors in the county. It also indicated that the four transit corridors and activity centers studied are expected to gain market share in the coming years, capturing more than 40 percent of all new residential growth, 78 percent of new office growth, and more than half of the new retail growth.

According to Noelle, this trend is supported by:

- Growing demand for "attached product" (townhomes, condos, and apartments) resulting from market preferences and issues of affordability;
- Land economics and demographic trends resulting in a greater share of single-family detached homes being built at higher-intensities relative to conventional single-family product that has dominated the county historically;
- Greater preference for areas that are highly walkable, diverse in land use and people, and convenient;
- Office users increasingly favoring areas with a higher-quality environment for their employees, including areas with residential components and that are walkable and convenient.

The LYNX BLE project begins in Center City Charlotte where the existing LYNX Blue Line ends. The Center City is the region's largest employment concentration housing workers, residences, office space, retail space, numerous entertainment, recreational, institutional/educational, and cultural destinations. The Northeast Corridor also contains the NoDa Historic Arts District and the major regional employment center of University City, which includes large employment complexes, medical facilities, and the UNC Charlotte campus. These destinations as well as the corridor's connection to other corridors and activity centers will continue to influence growth attractiveness and development potential within the Northeast Corridor through 2030.

Based on regional travel demand forecasts, discussed in further detail in the *Draft EIS Chapter 3.0: Transportation* (August 2010), all purpose travel in the Charlotte region is projected to increase approximately 58 percent for both peak period trips (morning and afternoon rush hours) and total daily trips from 2009 to 2030. Similarly, the Northeast Corridor is projected to increase approximately 53 percent for both peak period trips and total daily trips. The percent of trips by purpose in 2030 is expected to be 16 percent work trips, 45 percent home-based other trips, 38 percent non-home based and one percent home-based university trips.

As such, the City of Charlotte and Mecklenburg County have adopted policies to achieve growth management goals, help guide and manage land use in the proposed project corridor. These policies are discussed in greater detail in the *Draft EIS Chapter 4.0: Land Use, Public Policy and Zoning* (August 2010). Specifically, the *Centers, Corridors, and Wedges Growth Framework*, Draft 2010 recommends the concentration growth in five linear growth areas. These corridors are centered on high capacity transportation facilities, existing highways and planned transit improvements, and their ability to link neighborhoods, commercial and institutional uses and other districts.

2.2 Demographic and Employment Trends

The Charlotte-Mecklenburg area represents the largest concentration of population and employment in North Carolina. Population densities within Mecklenburg County are expected to increase within the 2030 analysis timeframe. The Northeast Corridor is anticipated to gain a substantial share of the population growth in the County. Likewise, employment share in the Northeast Corridor is projected to increase significantly (60 percent) by 2030. The University City area is expected to remain the largest employment area outside of the Center City.

2.2.1 Population

The *Draft EIS Chapter 1.0: Purpose and Need* and *Chapter 5.0: Socio-Economic Conditions* (August 2010) include discussions on existing and future demographic trends. Table 2-1 includes population trends for the State of North Carolina, Mecklenburg County and the City of Charlotte. According to U.S. Census Bureau data, between 1980 and 2000 Mecklenburg County's population and the City of Charlotte's population increased 37 percent, surpassing both state and national trends with a percentage point change approximately double the state average and nearly triple the national average.

Table 2-1
Historic Population Growth Trends

Area	Population			Growth			
				Actual Difference		% Change	
	1980	1990	2000	1980-2000	1990-2000	1980-2000	1990-2000
North Carolina	5,880,095	6,628,637	8,046,485	2,166,390	1,417,848	36.8	21.4
County	404,270	511,481	695,370	291,100	183,889	72.0	36.0
Charlotte	315,474	395,934	540,167	224,693	144,233	71.2	36.4
United States	226,542,199	248,709,873	281,421,906	54,879,707	32,712,033	24.2	13.2

Sources: LINC (NC State Data Center Website), www.linc.state.nc.us
American FactFinder (U.S. Census Bureau Website), www.factfinder.census.gov

Table 2-2 lists the 1990 and 2000 population and households for census tracts within the Demographic Area. The population in the Demographic Area increased by approximately 62 percent between 1990 and 2000. The total number of households in the Demographic Area increased by approximately 65 percent during the same time period. Within the Demographic Area, census tracts in the northern and eastern areas had the highest growth rate between 1990 and 2000. These tracts comprise a portion of the University City area and the area bordering Cabarrus County.

Table 2-2
Demographic Area Population and Households, 1990 and 2000

Census Tract(s) (1990)	Corresponding Census Tract(s) (2000)	Total Population			Total Households		
		1990	2000	% Change	1990	2000	% Change
1.00	1.00	895	1,127	25.9	445	717	61.1
5.00	5.00	2,209	2,351	6.4	1,158	1,305	12.7
6.00	6.00	1,752	1,755	0.2	554	412	-25.6
7.00	7.00	864	667	-22.8	236	197	-16.5
8.00	8.00	2,884	3,099	7.5	951	922	-3.0
9.00	9.00	2,321	2,224	-4.2	766	747	-2.5
10.00	10.00	2,461	2,255	-8.4	1,152	1,097	-4.8
13.00	13.00	4,166	4,319	3.7	1,750	1,777	1.5
14.00	14.00	2,400	2,656	10.7	935	1,083	15.8
15.01	15.05, 15.06*	9,260	9,329	0.7	3,277	3,462	5.6
15.03	15.03	7,081	9,191	29.8	2,750	3,412	24.1
15.04	15.04	4,629	4,806	3.8	1,681	1,674	-0.4
49.00	49.00	626	894	42.8	169	247	46.2
51.00	51.00	2,643	2,628	-0.6	976	934	-4.3
52.00	52.00	3,216	3,056	-5.0	1,016	948	-6.7
53.01	53.01	2,546	2,773	8.9	1,077	1,164	8.1
53.04	53.04	4,216	6,393	51.6	1,795	2,013	12.1
53.98	53.03 (tract change)	7,184	6,970	-3.0	2,477	2,519	1.7
54.02	54.02	5,396	6,588	22.1	1,957	2,518	28.7
55.01	55.03, 55.04*	3,261	12,915	296.0	1,243	5,188	317.4
55.02	55.05, 55.06, 55.07*	6,780	31,121	359.0	2,600	12,342	374.7
56.01	56.03, 56.04, 56.05, 56.06*	11,479	20,691	80.3	3,034	6,526	115.1
56.02	56.07, 56.08*	5,102	13,050	155.8	1,817	4,668	156.9
Total		***93,371***	***150,858***	***61.6***	***33,816***	***55,872***	***65.2***

* Tracts have been combined for comparison of the same geographic areas delineated in the 1990 U.S. Census.

The most significant population decline, approximately 23 percent, occurred in census tract number 7.00. Census tract number 7.00 includes the area directly abutting the proposed LYNX BLE and generally extends northeast from I-277 along Parkwood Avenue/North Brevard Street and North Davidson Street to 36th Street.

2.2.2 Employment

Employment within Mecklenburg County grew by approximately 386,500 jobs from 1993 to 2002, increasing from 374,000 to 520,000 employees (a 39 percent increase) (U.S. Census, County Business Patterns). Employment is projected to grow significantly between 2007 and 2030, with a projected 54 percent increase in the number of jobs. Center City is projected to maintain the largest concentrations of jobs in the region through 2030.

Table 2-3 provides employment information for industries in North Carolina, Mecklenburg County, and the Charlotte-Gastonia-Concord Metropolitan Statistical Area (MSA). In 1990 and 2008, the highest percentage of Goods-Producing Domain for the State, County, and MSA was Manufacturing.

In 1990, the highest percentage of Service-Producing Domain for the State and for Mecklenburg County was Trade/Transportation/Utilities followed by Education and Healthcare. In 2008, the highest percentage of Service-Producing Domain for the Mecklenburg County and the MSA remained Trade/Transportation/Utilities. However, the highest percentage of Service-Producing Domain for the State changed to Education and Health Services.

Between 1990 and 2008, the percentage of employment in Manufacturing and Trade/Transportation/Utilities for each of the reported areas decreased somewhat. During that same time, the percentage of employment in Financial Activities, Leisure and Hospitality, Education and Health Services increased. During the same period, the percentage of employment within the government sector increased slightly while those in the private sector decreased.

Table 2-3
Employment Distribution - Mecklenburg County, State and Charlotte MSA, 1990 and 2008

Employment Industry	1990 – Percent of Workforce			2008 – Percent of Workforce		
	North Carolina	County	Charlotte-Gastonia-Concord MSA	North Carolina	County	Charlotte-Gastonia-Concord MSA
Goods-Producing Domain						
Natural Resources/ Mining	0.8	0.1	0.4	0.8	.2	0.3
Construction	5.4	6.1	6.0	5.8	5.9	6.4
Manufacturing	26.6	13.2	22.8	12.7	6.0	9.0
Trade/Transportation /Utilities	21.1	27.8	24.8	19.7	22.3	21.7
Information	1.9	3.9	3.0	1.8	3.3	2.7
Financial Activities	4.4	8.7	6.8	5.1	11.0	8.7
Professional/ Business Services	7.7	14.1	10.7	12.5	19.7	16.7
Education and Health	16.1	12.0	12.3	22.7	15.3	17.5
Leisure and Hospitality	7.7	7.7	7.0	10.0	10.1	10.1
Other Services	2.6	3.1	2.9	2.6	2.9	2.8
Public Administration	5.6	3.2	3.3	5.8	2.9	3.5
Unclassified	0	0	0	.3	.4	0.4
Total Government Sector	15.5	10.1	10.7	17.0	11.3	13.0
Total Private Sector	84.5	89.9	89.3	83.0	88.7	87.0

Source: North Carolina Employment Security Commission.
Notes: Employment numbers are Annual Average Employment for aggregate of all types by Super sector or Domain. Year 2008 most recent year in which annual data available.

Table 2-4 shows the 25 largest employers in Mecklenburg County for 2008. In 2008, Healthcare and Financial Services continued to experience significant growth with Carolina's Healthcare System and

Wells Fargo/Wachovia Corporation surpassing even Charlotte-Mecklenburg Schools as the County's top two employers. Within the County, the Services and Retail sectors provide the largest number of jobs.

Table 2-4
Twenty-five Largest Employers in Mecklenburg County, 2008

Name of Employer	Employees	Industry Description
Carolinas Healthcare System*	26,283	Services (Health Care)
Wells Fargo/Wachovia Corp	20,000	Financial
Charlotte-Mecklenburg Schools*	19,485	Education
Bank Of America*	13,960	Financial
Wal-Mart Stores Inc	13,192	Retail
Presbyterian Regional Healthcare Corp*	9,000	Services (Health Care)
Delhaize America Inc/Food Lion LLC	8,658	Retail
Duke Energy Corp*	7,757	Utilities
North Carolina State Government	7,479	Government
US Airways	5,955	Transportation
Lowe's Companies Inc*	5,900	Retail
City of Charlotte*	5,896	Government
U.S. Postal Service	5,400	Government
Adecco	5,000	Services (Employment)
Ruddick/Harris Teeter Inc*	4,700	Government
Mecklenburg County*	4,700	Government
Compass Group*	3,518	Food Services
AT&T North Carolina	3,290	Utilities
U.S. Government	3,244	Government
Caromont Health Inc	3,230	services
Corestaff Services	2,900	Services (Health Care)
UNC Charlotte*	2,800	Education
Belk Inc*	2,700	Retail
TIAA-CREF	2,650	Financial
Philip Morris USA	2,600	Manufacturing

* Indicates that company is headquartered in Charlotte, North Carolina
Source: Largest Employers, 2008 Edition (Charlotte Chamber of Commerce), www.charlottechamber.com

2.3 Planning and Policy Documents and Zoning Ordinances

To accomplish growth management goals, the City of Charlotte and Mecklenburg County have developed documents and strategies to help guide and manage land use in the project corridor. The following policies, guidelines and plans provide specific guidance and regulations for areas within the FLUSA, as described in detail in the *Draft EIS Chapter 4.0: Land Use, Public Policy and Zoning* (August 2010).

Policies and Guidelines:

- *Transportation Action Plan (TAP)*
- *Urban Street Design Guidelines (USDG)*
- *General Development Policies (GDP's)*
- *Transit Station Joint Development Principles and Policy Guidelines*

Plans:

- *Centers, Corridors and Wedges Growth Framework*
- *2015 Plan: Planning for Our Future*
- *2025 Integrated Transit/Land Use Plan*
- *2030 Transit Corridor System Plan*
- *Center City 2010 Vision Plan*
- *Northeast Area Plan/Northeast District Plan*
- *University City Area Plan*

The Northeast Corridor includes properties that fall within a wide range of zoning districts, reflecting varying types and intensities of residential, commercial, and industrial uses. These vary from low-density districts of a more suburban character to high intensity, transit-supportive districts. As an implementation strategy for the development of property surrounding the proposed transit stations (within a ½-mile radius), properties may be rezoned with the appropriate transit-supportive zoning districts as part of the station area planning process. The three transit-supportive zoning districts in the currently adopted City of Charlotte Zoning Ordinance include the Uptown Mixed use District (UMUD), the Mixed Use Development District (MUDD) and the Transit Oriented Development District (TOD).

In October 2003, the Charlotte City Council approved a new set of TOD Zoning Districts applicable to areas within approved transit station area plans, including the Residentially Oriented (TOD-R) zoning district, the Employment Oriented (TOD-E) zoning district and the Mixed-Use Oriented (TOD-M) zoning district. The City has also implemented a number of overlay districts, including the Pedestrian Overlay District (PED) and the Transit Supportive Overlay (TS), to help encourage mixed-use, pedestrian-friendly and transit-supportive development.

2.4 Development Trends/Future Land Use

The Northeast Corridor has experienced significant change in the past few years, emerging with three distinct characteristics: the edgy, in-town district along North Davidson Street to NoDa; an aging suburban corridor along North Tryon Street/US-29 from Sugar Creek Road to Tom Hunter Road; and a suburban corridor experiencing mixed success from University City Boulevard north to I-485. It is projected that the North Davidson Street area will continue to fuel strong opportunities for intensification of residential, retail and creative office opportunities, particularly around the Parkwood, 25th, and 36th Street stations. Retail abandonment, limited interstate access, and economic stagnation are expected to temper the pace of development in the Sugar Creek Road to Tom Hunter Road area. The University City area and its proposed stations could benefit from several large-scale potentially catalytic projects. These projects include Belgate, UNC Charlotte expansion and associated development projects, and University Place.

The variations in development and land use patterns in the FLUSA will vary from existing patterns mostly around station areas. These variations from existing uses would likely be the transition to mixed-use designations in areas where there is the greatest potential for TOD. Existing land use policies and development regulations support the implementation of the proposed Light Rail Alternative. Existing and future development would be served by the improved transportation access and options that the proposed Light Rail Alternative would provide.

Figure 3a-b depicts the Charlotte-Mecklenburg Planning Department's Adopted Future Land Use. Overall future land use in the FLUSA is anticipated to vary minimally from existing land uses. Any variation from existing uses would likely be the transition to mixed use designations in areas where there is the greatest potential for TOD.

2.5 Notable Resources

The study area contains notable human and natural environment features that were inventoried and described in separate technical memoranda and in the *Draft EIS* (August 2010) chapters. This information was used to assess potential cumulative effects to these resources based on location, proximity to the

proposed project, and relationship to the proposed project. Table 2-5 provides a brief summary of notable human and natural environment resources.

Table 2-5
Notable Human and Natural Environment Resources

Resource Type	Present in FLUSA?
Wild and Scenic Rivers	No
High Quality Waters	No
Water Supply I or II Watersheds	No
Outstanding Resource Waters	No
Streams	17 jurisdictional stream channels
Jurisdictional Wetlands	13 jurisdictional wetlands
Floodplains and Floodways	Yes
Protected Species	4 Federally Endangered
Parks and Recreational	8 publicly-owned 4 proposed
Historic and Archaeological	8 properties listed/eligible,1 district eligible
Neighborhoods, Communities, Environmental Justice (EJ)	19 neighborhoods 2 universities, 1 post office, 2 community centers, 34 religious institutions, 6 schools, 4 library branches, 4 fire stations, 8 government facilities, 4 police stations, 1 YMCA and 3 medical centers including 1 major hospital 15 neighborhoods contain high concentrations of minority and/or low-income residents and 9 transit-dependent populations
Air Quality	No violations of 1-hour or 8-hour NAAQS for CO estimated under existing conditions

3.0 ASSESSMENT OF POTENTIAL SECONDARY AND CUMULATIVE EFFECTS

Interviews with the City of Charlotte provided a foundation for determining the potential for project-induced growth and changes in land use/development patterns in the FLUSA. NCDOT *Guidance on Indirect and Cumulative Impacts Assessment* (November 2001) provides a method for assessment of potential impacts that includes an evaluation of the factors in the sections that follow.

3.1 Consistency with Local Plans

As discussed in Section 2.3, the Planning Department and CATS are planning and implementing strategies to proactively manage the substantial future growth that is projected for the Charlotte region. Several policies, tools, and planning initiatives have been adopted to implement the vision of the *2025 Integrated Transit/Land Use Plan*, which is a multi-jurisdictional commitment to integrate transit and land use planning.

3.2 Explicit Economic Development Purpose

The project is not being constructed solely to initiate any economic development plans. The project is expected to complement and improve mobility and accessibility to existing economic/activity centers and recreational, entertainment, cultural, and other venues that are vital to the region's economic prosperity. Although not tied to any specific economic development initiatives or plans, the proposed project is likely to spur development and redevelopment interest, as well as investment within the corridor along with other previously described economic development/investment programs. This is evidenced by the success of the existing LYNX Blue Line (South Corridor); whereas, a June 6, 2005 article from *Passenger Transport* indicated that, "the momentum of economic development in this corridor (South) in anticipation of light rail has been outstanding". Additionally, estimated tax value of development within the South Corridor is high, at approximately 1.8 billion in projected investment between 2005 and 2011 (CATS, March 2008). This success may encourage similar development interest in the Northeast Corridor.

3.3 Planned to Serve Specific Land Development

The project is not being constructed to serve any specific development. Land development is likely, as the City has already approved several developments in the FLUSA.

3.4 Likely to Stimulate Land Development Having Complementary Functions

Factors such as distance to major urban centers, traffic volumes on intersecting roadways, and the availability of water/sewer services were considered in assessing this factor. The project is located in an area that ranges from densely urban to vacant/undeveloped. The FLUSA contains business and work destinations, civic places of interest, and entertainment, cultural and recreational venues. In addition, the majority of the FLUSA is served by water and sewer. As such, the outer portions of the FLUSA demonstrate the potential to develop and/or transition to higher intensity uses.

3.5 Likely to Influence Intraregional Land Development Location Decisions

The *NCDOT Guidance* suggests that if conditions are favorable for development and a region is currently undergoing urbanization, an improvement in the transportation infrastructure is likely to influence where development would occur and not necessarily if it would occur. Growth in the Charlotte region is expected to persist within the study analysis timeframe. Further, the Noell report suggests that Mecklenburg County will become increasingly urbanized through the next two decades and beyond, and emphasizes that residential and commercial uses in key activity centers and in the four major transit corridors in the county will continue to intensify. Additionally, location considerations affecting development potential within individual station areas and activity centers remain relative to county conditions and trends such as total population, household, and employment growth occurring in the county over time.

4.0 ANALYSIS OF RESULTS FOR SECONDARY AND CUMULATIVE EFFECTS

This section discusses the likelihood and location of probable secondary and cumulative effects on the human and natural environment. Also included are a discussion of assumptions and uncertainties associated with these results, particularly with regard to transit oriented development opportunities.

4.1 Project Related Activities

The Victoria Transport Policy Institute suggested that public transit improvements can increase mobility and accessibility in several ways. First, these improvements can improve mobility for non-drivers and increase transport affordability. Transit projects can also attract discretionary travelers (people who would otherwise drive). In addition, high quality transit often provides a catalyst for more accessible, walkable land use development patterns, which further increases mobility options and improves accessibility, which is the ease of reaching goods, services, activities, and destinations (VTPI, 2008).

The purpose of the proposed LYNX BLE, as detailed in the *Draft EIS Chapter 1.0: Purpose and Need* (August 2010), is to ensure future mobility by providing a transportation alternative in a highly congested travel corridor and to support the region's land use policies and goals for a sustainable growth and development pattern. The project would enhance regional accessibility while modifying local accessibility and land use management decisions. The types, pattern, and density of future and even existing development would be affected, but limited to localized areas surrounding station locations.

The proposed project would also support the *Centers, Corridors and Wedges Growth Framework*, Draft 2010, for the Charlotte-Mecklenburg region. As envisioned in the region's combined transit and land use plans, future development would be focused into areas that can support new development or are in need of redevelopment and away from areas that cannot support new growth. The highest density development would be encouraged around light rail stations. By focusing future growth in corridors with multiple travel alternatives, the region would be able to grow in a manner that promotes continued access and mobility and that enhances the quality of life for residents and employees.

The amounts of vacant and underutilized land are measures for documenting the development potential within a corridor. Vacant properties and underutilized land are located within the corridor. Underutilized land is defined as land where the land value exceeds the value of improvements on the property. The *Centers, Corridors and Wedges Growth Framework*, Draft 2010 indicates that in 2007 only 15 percent of the land within Charlotte's "sphere of influence" was vacant and that much of the new development that is anticipated would actually occur in the form of redevelopment. In addition, access to properties, available infrastructure and environmental restrictions would also influence the development and redevelopment potential of the corridor.

The probability of sweeping land use changes in the corridor related to the project is minimal. The FLUSA is expected to retain its overall urban to suburban character, and development interest and activity would exist with or without the project, as guided by the *Centers, Corridors and Wedges Growth Framework*, Draft 2010. However, the project is likely to encourage land use changes, redevelopment, and infill development at specifically targeted station areas within the PIA. Although land development in this area is highly likely, the magnitude, timing, and project-related affects cannot be accurately predicted.

4.2 Potential Secondary Effects

Reasonable and foreseeable secondary effects are discussed by alternative in the following sections. The secondary effects described are those resulting from the potential for induced development and the potential effects on notable features and communities of concern. The potential for land use changes in the corridor overall is influenced by the characteristics of the seven land use provided in the *Draft EIS Chapter 4.0: Land Use, Public Policy and Zoning* (August 2010), such as development and land use patterns, neighborhood characteristics, and transportation infrastructure.

- High Intensity Urban Core (at East 9th Street) – The portion of the FLUSA with the highest density and intensity of existing development, including the Center City area.

- Industrial Communities (Parkwood Avenue to East 27th Street) – The portion of the FLUSA just north of Center City with industrial and in-fill commercial and residential development, which is influenced by the past and existing presence of rail and proximity to Center City.
- Historic Urban Communities (36th Street to Sugar Creek Road) – The portion of the FLUSA that includes the well-known historic community and arts district of North Davidson (NoDa).
- Suburban Communities (Sugar Creek Road to Tom Hunter Road) – This portion of the FLUSA that contains the transition area between NoDa and the University Area, and generally includes commercial uses and light industrial along North Tryon Street/US-29 that serve as a buffer to residential neighborhoods and commercial shopping centers.
- New Suburban Communities/Greenfields (around University City Blvd.) – This portion of the FLUSA includes the new suburban community and greenfields in the area around University City Blvd., as well as the corridor's largest amount of undeveloped (Greenfield) and new large-scale retail chains (IKEA and Wal-Mart).
- University City Core (McCullough Drive to UNC Charlotte) – This portion of the FLUSA contains the University City core area, which is the mixed-use activity center of the University City Area Municipal Service District (MSD) that is heavily influenced by the UNC Charlotte campus and Carolinas Medical Center (CMC) - University.
- New Suburban Communities/Greenfields (East Mallard Creek Church Road to I-485) – This portion of the FLUSA is also a new suburban community and Greenfield area at East Mallard Creek Church Road to I-485.

The *NCDOT Guidance* suggests that the overall likelihood of induced development resulting from any transportation improvement can be contingent upon several factors, including location attractiveness, consumer preferences, other infrastructure, local political and economic conditions, and the rate and path of urbanization. While transit does not directly cause development to occur, it can help to direct development where infrastructure can better support it. Compact development patterns, achieved by the application of TOD zoning districts at station locations, reduce the cost of providing utilities, facilities, and services to new residential and commercial developments.

4.2.1 Light Rail Alternative

4.2.1.1 Likelihood of Induced Development

The potential for growth and land use changes in the overall corridor as a result of the proposed project is low-to-moderate under the Light Rail Alternative. Most of the area within the corridor contains neighborhoods in an urban or suburban setting. Overall, the proposed project is not likely to cause a substantial change in type or intensity of land use. The only exceptions to this are the vacant/undeveloped areas in the northeast portions of the corridor from University City Blvd./NC-49/NC-49 to I-485. This area contains growth-inducing factors such as the presence of developable land and the likely expansion of water and sewer service. However, any induced growth within the corridor would not be of such significant magnitude that a quantitative watershed analysis is necessary.

Based on land use policies and rezonings discussed in the *Draft EIS Chapter 4.0: Land Use, Public Policy and Zoning* (August 2010), it is reasonably foreseeable that the corridor would experience infill development, revitalization, and redevelopment activities as a result of the proposed project. However, the study area will experience growth and development in the study time frame with or without the proposed project, as evidenced by population and employment projections for the Northeast Corridor detailed in the *Draft EIS Chapter 1.0: Purpose and Need* (August 2010). The proposed project is not likely to influence if growth will occur in the corridor, but rather where and how the growth would occur.

Based on the interview with the City of Charlotte staff, it is reasonably foreseeable that the FLUSA would experience infill development, revitalization, and redevelopment. Growth associated with the proposed project would occur in a more compact development pattern due to the incentives to provide TOD opportunities at station areas that have a higher potential for land use changes and redevelopment. Project-induced activity would occur in the PIA around proposed stations consistent with land use plans and policies adopted to guide and manage the anticipated growth in the study area. The proposed project

also could affect the timing of planned/future developments as it is reasonable and foreseeable that development in the stations areas could occur in anticipation of the Light Rail Alternative.

These secondary effects are anticipated to be positive in terms of their effect on the corridor and the region overall. The Planning Department recognizes the need for proactive regional growth management, as well as redevelopment and revitalization prospects, to keep growth within existing developed areas as much as possible.

Development pressure has already been seen in the northeast corridor, with this trend anticipated to continue through 2030**.** Future development/redevelopment and land use changes in the FLUSA is related to policies that focus and manage anticipated growth rather than as a direct result of the Light Rail Alternative. Growth and investment is already apparent partially due to University City Partners (UCP) investments and UNC Charlotte's expansion plans.

Most of proposed project's direct effects would affect vacant, commercial, office, and industrial properties, which would encourage indirect transitions of industrial) uses to mixed use. Some stations are more susceptible to major changes in the magnitude, duration, likelihood, and location of growth.

Potential positive and negative secondary effects from the project are listed in Table 4-1. Secondary effects of TOD resulting from the proposed project are anticipated and desirable, as there is a nexus between TOD and the transit system initiative. The relationship is that TOD is used to support rail transit, while at the same time to leverage the development opportunity that a rail station may provide (Boarnet and Compin, *Journal of the American Planning Association*, Winter 1999). TOD would not otherwise occur without the implementation of the light rail portion of the proposed project, and likewise, the TOD is needed to support transit initiatives by means of increased ridership and system enhancement and growth.

Factors that would help encourage TOD in the corridor include:

- The strong local and regional support for meeting the proposed project goals and objectives.
- The increasing growth and market demand anticipated for the region.
- Past and future public and private efforts to revitalize and/or redevelop areas of need.
- Existing and forthcoming supportive land use policies.
- The "success" of the existing LYNX Blue Line and therefore likely support in the northeast corridor.
- Consistency with the *Centers, Corridors, and Wedges Growth Framework,* Draft 2010 and the *2025 Integrated Transit/Land Use Plan*.

Secondary effects of TOD resulting from the project are anticipated and desirable, as there is a nexus between TOD and the transit system initiative. The relationship is that TOD is used to support rail transit, while at the same time to leverage the development opportunity that a rail station may provide (Boarnet and Compin, *Journal of the American Planning Association*, Winter 1999). TOD would not otherwise occur without the implementation of the light rail portion of the proposed project, and likewise, the TOD is needed to support transit initiatives by means of increased ridership system enhancement and growth.

Existing literature suggests that TOD implementation is incremental (Boarnet and Compin, *Journal of the American Planning Association*, Winter 1999). In addition, there are "barriers" to TOD implementation, including the following:

1. Existing land use patterns near rail stations can limit opportunities for TOD.
2. Difficulties in assembling large parcels of land can limit TOD.
3. Private land market may not sustain new development projects, including transit-oriented ones.
4. Local economic and fiscal circumstances may discourage localities from pursuing TOD.
5. Local officials may not be fully informed about both the regional and local advantages of TOD.

A reasonable assumption is that the aforementioned #3 and #4 would create the most challenges for TOD implementation in the corridor, and to a limited extent #1, as described in subsequent discussions/sections. Factors that would help encourage TOD in the corridor include:

- The strong local and regional support for meeting project goals and objectives.
- The increasing growth and market demand anticipated for the region.
- Past and future public and private efforts to revitalize and/or redevelop areas of need.
- Existing and forthcoming supportive land use policies.
- The "success" of the LYNX Blue Line and therefore the likely support in the northeast corridor

Table 4-1
Potential Secondary Project Effects

Potential Positive Secondary Effects	Potential Negative Secondary Effects
• Improved mobility options through mode choices. • Improved regional transit accessibility and accessibility to adjacent land uses. • Reduction in overall commuter times. • Reduced motor vehicle costs. • Reduction in auto emissions and improved air quality. • Increase in property values associated with new development/redevelopment. • Increased sales-tax revenue. • Increased usage of community amenities (i.e. parks, recreation centers, cultural and entertainment venues, etc.) • Discourage urban sprawl. • Encourage conservation of natural resources and environmentally sensitive land through compact development. • Efficient use of available land for new development. • Redevelopment potential of existing vacancies/underutilized properties. • Support for more sustainable development. • TOD encouragement of diverse and affordable housing opportunities. • Transition to balanced and more pedestrian-friendly corridor.	• Impacts to streams/wetlands and water quality due to development/redevelopment activities. • Redevelopment within station areas could result in gentrification of neighborhoods and loss of affordable housing. • Potential destruction/redevelopment of historic properties or incompatibility with surrounding uses to historic districts/properties from development/redevelopment activities. • Increased traffic and demands on infrastructure from associated development around transit station areas. • Public opposition to increased density and new development patterns near neighborhoods. • Increased demand for public services (i.e. emergency and police).

Land Use Changes/Redevelopment Potential at Stations

As part of the station area planning process, the Charlotte-Mecklenburg Planning Department has undertaken preliminary planning for the Light Rail Alternative stations. These plans reflect a conceptual vision for any new development or redevelopment around each of the stations. Detailed Station Area Plans would be further developed as part of future activities to ensure that the type, location, intensity, and land use mix is appropriate for the goal of transit-supportive future development. This station area planning process will continue after the selection of the Preferred Alternative at the conclusion of the *Draft EIS*. Input from the community, including affected persons within each station area, will be sought in the development of these plans.

The Station Area Plan concepts have been developed around four basic station types: Urban, Neighborhood, Community and Regional. Table 4-2 provides the station types for the Light Rail Alternative. The station types vary in terms of types of access, place-making role and service area:

- Urban stations support walk-up and bicycle traffic, are typically integrated into existing, developed areas and have a half-mile service area.
- Neighborhood stations support walk-up and bicycle traffic, as well as some kiss-and-ride and bus-transfer access. The stations are intended to strengthen existing neighborhood centers and serve an area within a half-mile to one-mile of the station.
- Community stations primarily support bus transfer and park-and-ride traffic, but may also support some walk-up and bicycle traffic. The stations can function as a focal point for existing or future

development and typically have a one-to three-mile service area.

- Regional stations typically have large park-and-ride and bus transfer facilities and can serve as a focal point for new development. Regional stations are often end-of-line stations and can have service areas greater than five miles.

Table 4-2
Light Rail Alternative Station Type

Station	Type	Access
9th Street Station	Urban	Walk-up
Parkwood Street Station	Urban	Walk-up
25th Street Station	Neighborhood	Walk-up
36th Street Station	Neighborhood	Walk-up
Sugar Creek Station Park-and-Ride Option 1	Regional	Park-and-ride
Sugar Creek Station Park-and-Ride Option 2	Regional	Park-and-ride
Old Concord Road Station	Community	Park-and-ride
Tom Hunter Station	Community	Park-and-ride
University City Blvd. Station	Regional	Park-and-ride
McCullough Station	Community	Park-and-ride
JW Clay Blvd. Station	Neighborhood	Walk-up
UNC Charlotte Station	Neighborhood	Walk-up
Mallard Creek Church Station	Community	Park-and-ride
I-485/N. Tryon Station	Regional	Park-and-ride

Secondary effects to the properties adjacent to stations are reasonably foreseeable and somewhat easier to identify due to the preliminary planning for these areas. Table 4-3 summarizes the development potential associated with the proposed project, including residential and employment growth for the overall corridor and within ½-mile radius of each station. This information was obtained from the *FY 2011 New Starts Report Submission* (October 2009), which provides quantitative estimates of development potential within the analysis timeframe.

Table 4-3
Population and Employment Projections, 2030

Area	Projection	Housing Units	Population	Employment	Land Area (sq. mi.)	Housing Unit Density	Population Density	Employment Density
Metropolitan Area	**Base Year**	—	2,076,896	1,057,615	—	—	—	—
	Forecast Year 2030	—	3,189,734	1,747,255	—	—	—	—
	Growth (%)	—	53.6%	65.2%	—	—	—	—
Central Business District	**Base Year**	—	—	68,630	2.10	—	—	32,653
	Forecast Year 2030	—	—	111,069	2.1	—	—	52,844
	Growth (%)	—	—	61.8%	—	—	—	—
Corridor	**Base Year**	—	89,360	79,736	40.7	—	2197.7	3108.0
	Forecast Year 2030	—	126,373	127,317	40.7	—	3108.0	3131.2
	Growth (%)	—	41.4%	59.7%	—	—	—	—
Total All Station Areas	**Base Year**	8,696	23,134	46,744	8.9	972.7	2587.6	5228.6
	Forecast Year 2030	17,390	44,193	76,570	8.9	1945.1	4943.2	8564.7
	Growth (%)	100.0%	91.0%	63.8%	—	—	—	—
9th Street Station	**Base Year**	2,504	4,469	25,176	0.8	3,321	5,927	33,389
	Forecast Year 2030	6,040	10,431	39,722	0.8	8,010	13,834	52,679
	Growth (%)	141.2%	133.4%	57.8%	—	—	—	—
Parkwood Station	**Base Year**	515	1,682	2,163	0.6	809	2,642	3,398
	Forecast Year 2030	1,041	3,419	3,516	0.6	1,636	5,371	5,523
	Growth (%)	102.2%	103.3%	62.5%	—	—	—	—
25th Street Station	**Base Year**	587	1,727	1,419	0.6	953	2,803	2,303
	Forecast Year 2030	1,170	3,549	2,763	0.6	1,899	5,760	4,483
	Growth (%)	99.3%	105.5%	94.7%	—	—	—	—
36th Street Station	**Base Year**	844	1,968	2,024	0.7	1,192	2,780	2,859
	Forecast Year 2030	1,701	4,101	3,297	0.7	2,403	5,795	4,658
	Growth (%)	101.6%	108.5%	62.9%	—	—	—	—
Sugar Creek Station	**Base Year**	576	1,447	1,848	0.8	759	1,906	2,434
	Forecast Year 2030	777	1,989	3,017	0.8	1,024	2,620	3,974
	Growth (%)	34.9%	37.4%	63.3%	—	—	—	—
Old Concord Road Station	**Base Year**	678	1,862	1,451	0.8	864	2,371	1,848
	Forecast Year 2030	838	2,358	2,509	0.8	1,067	3,003	3,195
	Growth (%)	23.5%	26.7%	72.9%	—	—	—	—
Tom Hunter Station	**Base Year**	1,147	3,496	829	0.7	1,583	4,829	1,145
	Forecast Year 2030	1,318	4,077	1,774	0.7	1,827	5,630	2,450
	Growth (%)	15.0%	16.6%	114.0%	—	—	—	—
University City Blvd. Station	**Base Year**	233	614	1,427	0.7	323	849	1,973
	Forecast Year 2030	755	1,902	2,490	0.7	1,044	2,628	3,442
	Growth (%)	223.6%	209.6%	74.5%	—	—	—	—
McCullough Station	**Base Year**	83	186	5,036	0.7	112	250	6,772
	Forecast Year 2030	866	2,096	6,687	0.7	1,164	2,818	8,992
	Growth (%)	941.8%	1029.3%	32.8%	—	—	—	—

Table 4-3 (continued)
Population and Employment Projections, 2030

Area	Projection	Housing Units	Population	Employment	Land Area (sq. mi.)	Housing Unit Density	Population Density	Employment Density
JW Clay Station	**Base Year**	614	1,372	2,571	0.7	936	2,091	3,918
	Forecast Year 2030	1,358	3,283	3,371	0.7	2,070	5,003	5,136
	Growth (%)	121.2%	139.2%	31.1%	—	—	—	—
UNC Charlotte Station	**Base Year**	306	2,346	2,059	0.6	536	4,113	3,610
	Forecast Year 2030	349	3,151	3,967	0.6	611	5,525	6,955
	Growth (%)	13.9%	34.3%	92.6%	—	—	—	—
Mallard Creek Church Station	**Base Year**	188	945	671	0.6	332	1,664	1,181
	Forecast Year 2030	400	1,751	2,360	0.6	703	3,082	4,154
	Growth (%)	112.1%	85.3%	251.7%	—	—	—	—
I-485/N. Tryon Station	**Base Year**	420	1,020	71	0.7	604	1,467	101
	Forecast Year 2030	777	2,086	1,099	0.7	1,118	3,001	1,580
	Growth (%)	85.1%	104.6%	1457.3%	—	—	—	—

Source: LYNX Blue Line Extension, Northeast Corridor Light Rail Project, FY2011 New Starts Report Submission, Charlotte Area Transit System. October 2009.

Based on the development potential analyzed:

- The corridor would see slightly lower population and employment growth than the metropolitan area.
- The population growth for the total all station areas (91 percent) is substantially higher than for the projected corridor growth (41.4 percent) and for the metropolitan area (53.6 percent).
- The highest growth in population and employment would occur in the University City Core (McCullough Drive to UNC Charlotte), the High Intensity Urban Core (at East 9th Street), and New Suburban Communities/Greenfields (around University City Blvd./NC-49) areas.
- The least growth in population and employment would occur in the Suburban Communities (Sugar Creek Road to Tom Hunter Road) area.
- The highest population growth is projected to occur around McCullough Station, and the highest employment growth is projected to occur around the I-485/N. Tryon Station.
- Although the corridor is projected to experience moderate growth in population (41.4 percent) and employment (59.7 percent), the overall density of this growth isn't anticipated to vary much between existing and future conditions. However, in station areas the density is expected to increase.

Economic and market conditions and project timing could affect station area redevelopment and TOD potential. Additionally, the density of existing development; amount of property available for development/redevelopment; achieved rents or unit prices in the area; density of new development occurring in the station area; also could affect redevelopment and TOD potential. Based on information obtained for the analysis, the following project-specific outcomes are reasonably foreseeable:

- Redevelopment and infill development (i.e. high density residential development) is already apparent in the High Intensity Urban Core (East 9th Street).
- Trend for industrial redevelopment in the Industrial Communities areas such as Parkwood Avenue to East 25th Street.
- New development, mostly employment-generating, would be contained in the New Suburban Communities/Greenfields area.

Noell categorized overall development opportunity into 3 "Tiers" with Tier 1 having the strongest development/redevelopment opportunities. Tier 2 includes those areas that are a mix of Greenfield and infill development/redevelopment opportunities. Tier 3 includes areas of limited opportunities without significant public incentive. Tier 1 stations were identified as 9th Street, McCullough, University City Blvd., and UNC Charlotte; and of these stations, 9th Street ranked highest in terms of development potential. Tier 2 stations were identified as Mallard Creek Church, I-485/N. Tryon, 36th Street, and 16th Street; and of the Tier 2 stations, Mallard Creek Church Station ranked highest for development potential. Tier 3 Stations include Sugar Creek, 25th Street, Old Concord Road, and Tom Hunter. Additional detail regarding the opportunities for each individual station are summarized in the Noell Report.

Table 4-4 summarized development potential at each station. Overall, 9th Street, McCullough, University City Blvd./NC-49, and the UNC Charlotte Stations have the strongest development/redevelopment opportunities, with the 9th Street Station ranked highest in terms of development potential. Mallard Creek Church and the I-485/N. Tryon Stations are Greenfield areas with development/redevelopment opportunities. The 36th Street and Parkwood Stations are also areas with moderate infill development/redevelopment opportunities. Sugar Creek, 25th Street, Old Concord Road, and Tom Hunter Stations have the most limited development opportunities, particularly without significant public incentives.

Table 4-4
Summary of Development Potential

Station	Key Strengths	Challenges and Key Issues	Market Trends	Current Land Uses	Planned Development	Development Opportunity by Land Use Category				Overall Development Rating	
						Office	Regional	Neighborhood	Residential	Purely Market Driven	With Public Investment
9th Street Station	Strong in-town location, proximity to office core and social/ recreational amenities.	Too close to employment core to have significant ridership. May be too close to CBD to have significant ridership.	Current in-town housing boom for mid and high-rise condominium units. Strong Center City office and increasing interest in urban retail.	Primarily underutilized surface parking lots.	Plans underway to redevelop approx. 32 acres of underutilized land between East 7th, East 9th Street and North Brevard Street. Called First Ward Urban Village will be mixed-use development of office and retail, residential units, a park, underground parking deck. The New UNC Charlotte academic building will anchor the initial phase of the project.	5	4	4	5	4	4
Parkwood Station	Several large, underutilized properties with strong proximity to the CBD.	Heavy industrial area with significant rail yard and lack of market momentum. Relocation of the rail yard and public incentive to aid private development with assemblage, potential Brownfield reclamation.	Little recent growth, more significant industrial redevelopment has occurred to the north.	Primarily vacant or underutilized industrial facilities, Norfolk Southern facility and aging residential uses to the east.	Potential relocation of the rail yard, but remaining properties may not be desirable. Some infill residential to the east.	2	1	3	3	2	4

Table 4-4 (continued)
Summary of Development Potential

Station	Key Strengths	Challenges and Key Issues	Market Trends	Current Land Uses	Planned Development	Development Opportunity by Land Use Category				Overall Development Rating	
						Office	Regional	Neighborhood	Residential	Purely Market Driven	With Public Investment
25th Street Station	Potential development site if relocation of rail yard. Near NoDa redevelopment. Proximity to CBD.	Heavy industrial area with large rail yard and lack of market momentum, few surrounding households, poor neighborhood connectivity. No visibility.	Little to no recent growth, more significant industrial redevelopment to the north.	Almost entirely industrial.	Possible relocation of rail yard switching facility. Some nearby loft commercial and residential properties.	2	1	3	3	2	4
36th Street Station	Existing arts and neighborhood commercial corridor. Significant infill and redevelopment opportunities.	Lack of interstate access. Small concentration of redeveloping core. Maintaining historic “main street” charm. Parcel assemblage for introduction of more housing to encourage additional commercial redevelopment. Encouraging NoDa spread to North Tryon Street.	Gentrifying neighborhood with infill residential and neighborhood commercial development.	Mix of residential and neighborhood supporting commercial uses.	Several small scale residential infill developments and retail revitalization.	2	1	4	4	3	4

Table 4-4 (continued)
Summary of Development Potential

Station	Key Strengths	Challenges and Key Issues	Market Trends	Current Land Uses	Planned Development	Development Opportunity by Land Use Category				Overall Development Rating	
						Office	Regional	Neighborhood	Residential	Purely Market Driven	With Public Investment
Sugar Creek Station and Old Concord Road Station	Create opportunity for redevelop-ment of failing retail centers and/or underutilized sites with good visibility and access.	Significant infrastructure costs. Potential for poor visibility and pedestrian connection to Tryon Mall site, depending on station location. Need to interject new households to help revitalize failing retail.	Retail abandonment and little to no new housing growth.	Failing or vacant/under-utilized commercial properties. Industrial uses.	No significant planned developments exist, including no new private sector development.	1	2	2	3	1	3
Tom Hunter Station	Moderate visibility, decent densities, and good connection to the west.	No connection to the east, poor interparcel connectivity, few available large tracts. Public sector incentives to aid in parcel assemblage. Create location and sense of transition on North Tryon Street.	Affordable rental and for-sale housing, significant retail abandonment.	Underperform-ing or vacant commercial tracts with significant North Tryon Street frontage but limited depth.	No significant planned developments exist.	1	2	2	3	1	3

Table 4-4 (continued)
Summary of Development Potential

Station	Key Strengths	Challenges and Key Issues	Market Trends	Current Land Uses	Planned Development	Development Opportunity by Land Use Category				Overall Development Rating	
						Office	Regional	Neighborhood	Residential	Purely Market Driven	With Public Investment
University City Blvd. Station and McCullough Station	Potential for good I-85 access. Large underutilized tracts at intersection, prime for mixed-use develop-ment.	Area lacks any sense of place. Transportation access tough today. Major infrastructure improvements necessary. Coordinating private sector development planning with transit needs.	Area has largely been bypassed with development shifting to the north.	Primarily vacant or underutilized parcels.	Significant planned Crosland mixed-use/office development with new street network proposed although plans not currently planned as TOD.	4	3	3	4	4	5
JW Clay Blvd. Station	Strong visibility and access with better pedestrian connectivity than south of Harris Boulevard.	Working with the hospital and University to plan for connectivity. Coordination with both the hospital and UNC Charlotte for development of transit-supportive uses and designs. Creating a downtown for the University area.	Development of institutional uses and continuing reinvention of University Place.	Regional retail, hospital, University.	Current plans for expansion of both the hospital and University. Additional growth occurring in the office park.	4	3	3	4	4	5

Table 4-4 (continued)
Summary of Development Potential

Station	Key Strengths	Challenges and Key Issues	Market Trends	Current Land Uses	Planned Development	Development Opportunity by Land Use Category				Overall Development Rating	
						Office	Regional	Neighborhood	Residential	Purely Market Driven	With Public Investment
Mallard Creek Church Road	Strong visibility and interstate access, major park and planned private development.	Significant amount of wetland area leaves few developable sites. Coordination with private sector development plans and creation of coordinated activity center.	Emerging as a new apartment and affordable residential core with potential for mixed-use.	Primarily wetland or park space with some limited commercial and nearby apartments.	Planned private sector mixed-use development.	3	3	4	4	4	4
I-485/ N.Tryon Station	Strong regional visibility and access with some opportunities for large scale development.	Assemblage of trailer park site to create redevelopment opportunity. Reuse of other major properties. Improving surface street access/network.	Affordable rental and for-sale housing developments.	Affordable apartment communities, underutilized trailer park, new cinema anchored retail, destination amphitheater.	Nearby residential community.	3	3	4	4	4	4

Source: Charlotte Northeast Corridor TOD Station Analysis (Robert Charles Lesser & Co., September 22, 2005)

Land Use Changes/Redevelopment Potential Outside of Transit Influence
New private development that would be occurring outside of the PIA would likely add to the region's traffic congestion and contribute to deteriorating air quality. These effects would not be contributable to the Light Rail Alternative as it would be beyond the ½-mile radius of a station that would be reasonable and foreseeable to occur as a secondary effect of the Light Rail Alternative. A continued loss of open space and pressure on public facilities (schools, water, sewer, garbage collection, libraries, parks, etc.) could also occur. Such effects could be minimized by utilizing government regulations that require adequate public facilities prior to new development and by exercising land use control that requires development to be mixed, compact, pedestrian friendly and transit oriented. The Charlotte-Mecklenburg community government has demonstrated a clear direction to control land use, as evidenced by the array of land use planning tools created by Charlotte-Mecklenburg to facilitate transit-supportive development.

The proposed Light Rail Alternative would help alleviate, in a positive and assertive manner, many of the current effects of sprawl. By providing an alternative to the automobile, and by encouraging transit-oriented development adjacent to the proposed transit stations, the project would help alleviate traffic congestion, improve air quality, enhance mobility and accessibility, and ensure continued economic development within the corridor. The proposed project would also assist Charlotte-Mecklenburg in achieving many of its land use goals that call for mixed-use, transit-oriented development in designated areas.

A continued pattern of urban sprawl would have significant consequences for the region, and such a pattern of land use development is not sustainable. However, most of the effects of sprawl can largely be managed through local land use controls. Fortunately, Charlotte-Mecklenburg has implemented a series of land use policies that discourage a sprawling development pattern. The proposed Light Rail Alternative would also help minimize sprawl by providing improved mobility and accessibility and by encouraging transit-oriented development adjacent to the proposed transit stations. By integrating transit and land use, Charlotte-Mecklenburg hopes to reduce reliance on the automobile by providing a mix of land uses within easy and convenient access to public transit.

4.2.1.2 Effects on Notable Features

This section addressed the potential secondary effects on notable features within the corridor. These features include: water resources, water quality and natural resources; protected species and habitat; parks and recreational resources; historical and archaeological resources; neighborhoods, community services and environmental justice; and air quality.

Water Resources, Water Quality and Natural Resources
Surface waters and wetlands within the study area have been extensively altered by urban development within the last few decades. Impacts to water resources in the study area may result from other development activities. Activities that would result in impacts are clearing and grubbing on stream banks, riparian canopy removal, in-stream construction, fertilizer and pesticide use for revegetation, and pavement/culvert installation.

Induced growth as a result of the project would have a secondary effect on water resources and water quality. However, as described in Section 4.2.1.1, an accurate quantitative measurement of secondary development directly related to the project is unknown. It is anticipated that growth would occur at a low-to-moderate rate. Without the TOD, ordinances that would be in place if the Light Rail Alternatives is selected for implementation, it is expected this same growth would occur within the corridor, but would occur at lower densities and in a less concentrated manner. Because of this, the Light Rail Alternative would have fewer impacts to water resources and water quality than the No-Build Alternative.

Protected Species and Habitat
There are no known protected species located in the immediately vicinity of the project and most of the corridor is maintained/disturbed habitat. Fragmentation and loss of wildlife habitat are unavoidable consequences of the Light Rail Alternative and new development. Some wildlife species which occur within the study area may be permanently displaced as a result of changes in plant community

boundaries. Increased urbanization in the project study area already has diminished habitat opportunities as woodlands and undeveloped land are committed to development.

Secondary impacts that would result from induced growth would be the continued loss of habitat with the corridor. The areas that remain forested are located within University City Blvd. Station area and the areas to the north. While loss of habitat could occur as a result of secondary development within the corridor, the concentration of development within the corridor would occur within the areas that are primarily developed as commercial corridors already. It is unlikely that large areas of forested habitat would be cleared as a result of induced growth from the project. The Light Rail Alternative would have fewer secondary impacts than the No-Build Alternative due to the compact development patterns encouraged by the TODs.

Parks and Recreational Resources

It is not likely that induced growth would eliminate or disrupt parks and recreational resources within the corridor. There are several public parks and recreational facilities within the corridor and increased development would not reduce the County's ability to provide adequate facilities for the population.

Historic and Archaeological Resources

Most of the historic resources within the proposed project corridor were built along the railroad corridor in urban locations, and few of the actions proposed under this project would have any effect on the historic properties. As a result, all of the historic properties identified within the APE have been determined to have No Effect or No Adverse Effect from the proposed project. Overall, these sites and districts would not face additional development pressure resulting from the proposed project. However, some of the historic sites and districts along the corridor could face additional incremental development and/or redevelopment pressure from the Light Rail Alternative.

The areas with historic resources/features that are most likely to face additional development pressure are the 25th Street and 36th Street stations. Secondary development could cause pressure for rezoning and spur additional redevelopment in these areas. This could have cumulative effects such as long-term incremental visual changes on the overall appeal and character of the NoDa area. However, the visual changes could benefit those areas that currently have high visibility of adjacent industrial parcels, particularly around 25th Street. The impacts to archaeological features within a ½-mile of the station areas are unknown due to the hidden nature of these resources.

Neighborhoods, Community Services and Environmental Justice

The proposed project alternatives would have the potential to cause both positive and negative secondary impacts to Neighborhoods, Community Services and Environmental Justice Populations. Most of the neighborhoods located in the proposed project corridor are well-established and have existed for 20 years or more. Some areas, such as Belmont and North Charlotte, have experienced redevelopment and rehabilitation initiatives, resulting in some gentrification. A secondary impact of the Light Rail Alternative would be a continuation of this trend, particularly in neighborhoods that are located around proposed station areas where transit-oriented development is expected to occur.

As the Light Rail Alternative is likely to encourage land use changes, redevelopment, and infill development at specifically targeted station areas, changes to neighborhood character and loss of amenities such as affordable housing could occur. The City of Charlotte is addressing the potential development through TOD-zoning and Station Area Plans that would control the location and quality of development to ensure that it is compatible with the neighborhood surroundings and existing amenities such as affordable housing.

The Light Rail Alternative would result in changes to some local traffic operations and street patterns, particularly along North Tryon Street/US-29 where the Light Rail Alternative would operate within the median of the road. Along those segments, left turns that are currently allowed would be prohibited. To accommodate motorists, u-turns would be permissible at selected signalized intersections, resulting in no drastic changes to accessibility. However, motorists who utilize u-turn options may experience increased travel time and distance. Some local residents may utilize secondary neighborhood streets as short-cuts. As a result, increased cut-through traffic in some neighborhoods could result.

The potential negative secondary impacts of the proposed project would be off-set from the enhanced access to transit that would be associated with the Light Rail Alternative. Both alternatives would provide another mode of transportation for residents and community service patrons and provide a more efficient option to automobile and bus travel. Additionally, accessibility for transit users, bicyclists and pedestrians within the Northeast Corridor would be positively impacted by the proposed project. Pedestrian improvements (sidewalks, crossings, etc.) are proposed along the corridor and beyond (through a separate project the Northeast Corridor Improvements Project), and bicycle lanes would be constructed along North Tryon Street/US-29 as part of the Light Rail Alternative. Given the distance of most neighborhoods from the proposed Light Rail Alternative, overall negative impacts to automobile travel patterns and accessibility are not anticipated.

Air Quality

Air quality in the region has been affected by increased growth and population over the last few decades. A large contributor to air quality impacts is the use of single-occupancy vehicles. By offering another mobility option, the proposed Light Rail Alternative would reduce VMT. Therefore, the Light Rail Alternative would not cause secondary negative impacts to air quality, but rather would help to improve air quality and remains consistent with local long-range transportation plans and air quality goals.

4.2.2 Light Rail Alternative – Sugar Creek Design Option

Since the Light Rail Alternative station locations are in proximity to the stations for the Light Rail Alternative – Sugar Creek Design Option, the secondary effects for the design option would be the same as for the Light Rail Alternative. There would be no differences in secondary effects and minor differences in the effects on notable features between the Light Rail Alternative and the Light Rail Alternative – Sugar Creek Design Option.

4.3 Potential Cumulative Effects

A cumulative effect includes the total effect on a natural resource, ecosystem, or human community due to past, present and future activities or actions of Federal, non-Federal, public and private entities. Projects can include other transportation projects, private or public development projects including residential, commercial or industrial development, public policy changes and changes to environmental conditions including point and non-point discharges into surface waters. A cumulative impact assessment is resource specific, although not all resources directly impacted by a project will result in cumulative effects. In determining cumulative effects, the past present and future activities were reviewed in conjunction with potential project effects on notable features, as summarized in Table 2-5 and documented in separate technical memoranda and in the *Draft EIS*.

4.3.1 Past Activities

Traditional development patterns have generally followed a sprawling land use pattern. Low-density residential uses have developed in isolation from employment centers and shopping. Office parks, shopping centers, apartments, and single-family subdivisions generally creep further and further from Center City Charlotte into the outer areas of the corridor. This pattern of land use has resulted in the following cumulative effects:

- Loss of open space;
- Degradation of water and air quality;
- Decreased mobility due to declining levels of service of roadways (i.e. traffic congestion);
- Increased commute times due to traffic congestion;
- Increases in auto dependency and fuel consumption;
- Loss of sense of place and community due to isolation of land uses;
- Isolation (i.e. separation) of employees from activity centers, homes, daycare and schools;
- Decline in economic activity in Center City Charlotte and other employment centers;
- Reduced economic opportunity in existing buildings, facilities, and services; and
- Overall decline in quality of life.

4.3.2 Present Activities

The region has implemented land use policies and plans to change past trends and focus future development into growth corridors and activity centers. Present activities include both private and public projects within the corridor. The private projects include new mixed-use developments, single family and multi-family residential development and a variety of other commercial and office development.

Specifically, Center City Charlotte has experienced recent development activity, including residential development. Additionally, development has recently occurred within the NoDa area. This development has been primarily positive due to the proximity to the proposed transit corridor, the consistency with local land use policies and the mixed nature of the development. UNC Charlotte also has significant construction underway to accommodate enrollment growth.

There are also a variety of public projects underway, including roadway improvements, water and sewer line installations and streetscape improvements. The most significant current project in the corridor is the City of Charlotte's project at North Tryon Street/US-29 and University City Boulevard/NC-49, to convert the "weave" configuration into two at-grade, signalized intersections. The project will improve safety for vehicles, pedestrians and bicyclists in the area.

4.3.3 Future Activities

There are numerous planned private projects and publicly-funded capital improvements related to or separate from the proposed LYNX BLE. The *Draft EIS Chapter 3.0: Transportation* (August 2010), describes local and state planned or programmed roadway improvements that could have implications for cumulative effects. In addition to these improvements, several large transportation projects that would affect overall travel and freight mobility in the region are in the planning stages. These projects are currently being proposed by MUMPO, CATS, NCDOT and the Norfolk Southern Corporation.

4.3.3.1 CATS Corridor System Plan Projects

- *2030 Transit Corridor System* Plan: On November 15, 2006, the Metropolitan Transit Commission (MTC) adopted the *2030 Transit Corridor System Plan* which plans for 25 miles of commuter rail, 21 miles of light rail (including 9.6 miles of the existing LYNX Blue Line), 16 miles of streetcar, 14 miles of bus rapid transit and an expanded network of buses and other transit facilities. The proposed LYNX BLE Light Rail Alternative is included in the plan.
- LYNX Blue Line Light Rail (South Corridor): The proposed LYNX BLE project creates projected 2030 ridership loads that would require either 1) the operation of ten-minute headways with 3 car trains or 2) six-minute headways with 2 car trains. Both scenarios require retrofit improvements to the existing LYNX Blue Line light rail (*South Corridor Improvements*, STV 2009).

4.3.3.2 Other Transportation Projects

- Sugar Creek Road Grade Separation Project: This project is included in the 2009-2015 TIP. The project will grade separate the rail crossing by depressing Sugar Creek Road under the freight tracks. CATS is coordinating with NCDOT Rail and NCRR so that the light rail crossing is accommodated by this project. This project allows the Sugar Creek Station to be on the bridge, which will be at-grade with surrounding land use, improving visibility and access.
- Charlotte Rail Improvement and Safety Project (CRISP): Several rail companies and government agencies are working to improve the overall railway system in the Charlotte region. These entities include: NCDOT, CATS, the city of Charlotte, CSX, NS and the North Carolina Railroad (NCRR). The goal of the Charlotte Rail Improvement and Safety Project (CRISP) is to create or maintain accommodations for potential higher rail speeds along the entire rail corridor (See Figure 4). The proposed Light Rail Alternative preserves the future CRISP project through a shift of the existing freight tracks to the west at 36th Street. This shift accommodates the proposed CRISP project and allows adequate separation between freight and light rail tracks, while preserving the historic buildings along the east side of the corridor. Specific elements of the CRISP project are described below under CRISP Rail-Related Projects.

- High Speed Rail: North Carolina and Virginia have formed a bi-state commission to review and encourage the development of a high speed (110 mph) passenger rail service from Washington, D.C. to Charlotte. Plans call for an increase in passenger rail service over a 20-year period between Charlotte, Raleigh, Richmond, and Washington D.C., which would result in significant reductions to travel time through track upgrades and expansions. The timing of the high speed rail is unknown at this time.
- Completion of the I-485 Loop: Interstate 485 (I-485) is a partially-completed beltway around the Charlotte region. The incomplete portion is located in northeast Charlotte, Mecklenburg County, to the northwest of the terminus of the Northeast Corridor, and will consist of an eight-lane freeway from NC 115 (Old Statesville Road) to west of the existing portion of I-485. NCDOT plans to start right-of-way acquisition in 2010 and other funding sources are being considered to allow construction of the project by 2013.
- I-85 Widening: This TIP project will widen approximately 13 miles of I-85 from US-29/NC-49 in Mecklenburg County to NC 73 in Cabarrus County. This project could benefit travel along North Tryon Street/US-29 by diverting inter-county traffic from North Tryon Street/US-29 to I-85, thereby relieving some of the congestion at intersections.

CRISP Rail-Related Projects

Several rail companies and government agencies are working to improve the overall railway system in the Charlotte region. These entities include the NCDOT, CATS, the City of Charlotte, CSX, Norfolk Southern (NS), and the North Carolina Railroad (NCRR). Many of the proposed improvements are part of the Charlotte Rail Improvement and Safety Project (CRISP). CRISP is intended to improve various rail operations in Charlotte by creating and/or maintaining accommodations for potential higher rail speeds along the entire rail corridor and assist in reducing travel times for both freight and passenger rail. The following list of CRISP rail-related projects in Charlotte is depicted in Figure 4. The parenthetical numeric citation (#) is provided for each listed project.

- CSX/NS Mainline Grade Separation Project (1): NCDOT proposes to grade separate the existing at-grade crossing of the CSX rail line and Norfolk Southern (NS) mainline where these tracks cross in Charlotte's Fourth Ward neighborhood, under I-277 at Seaboard Street. This location is North Carolina's busiest at-grade railroad crossing. The proposed project will place the CSX mainline in a trough that will run below the existing grade of the tracks. This project will eliminate several existing at-grade roadway/railroad crossings in the vicinity. This separation project will enhance safety, reduce noise, emissions and energy use, while improving rail operations and increasing efficiency for freight and passenger rail.
- NS Mainline South End Track Improvements and Crossing Closures (2): NCDOT proposes improvements to the NS mainline between Clanton Road and Martin Luther King Boulevard. The proposal includes the construction of a third NS mainline track, relocations and modifications of sidings, installation of new track crossovers and signals, widening of railroad bridges at several streets, closure of two at-grade crossings, construction of new locomotive and railcar service and construction of new station tracks.
- Charlotte Gateway Center/Greyhound Terminal and Central Parking Structure (3,4): NCDOT also proposes to develop a multi-modal station incorporating intercity rail, commuter rail, intercity bus, regional bus, local bus, streetcar and taxi service through a public/private partnership. The Charlotte Gateway Center will be located directly southwest of the Trade Street Transit Center in Center City, near East Trade Street and North Graham Street. A new Greyhound bus station will also be constructed adjacent to the rail corridor between East 3rd Street and East 4th Street. The station will be located on the ground level with a five-story parking structure above to support multimodal parking needs.
- New Wye at Charlotte Junction (5): NS proposes to construct a new track and create a turning wye in the southern quadrant for passenger and freight trains. Trains will turn in this location for access to Gateway Center, Charleston/Columbia rail corridor and the new NS intermodal facility at the airport.
- Charlotte Rail Improvement and Safety Project (CRISP)/NS Mainline North End Track Improvements /Northend Passenger Bypass (6A, 6B): Several rail companies and government agencies are working to improve the overall railway system in the Charlotte region. These entities include: NCDOT, CATS, the City of Charlotte, CSX, NS, and the North Carolina Railroad (NCRR). The goal of the Charlotte

Rail Improvement and Safety Project (CRISP) is to create or maintain accommodations for potential higher rail speeds along the entire rail corridor. The proposed Light Rail Alternative preserves the future CRISP project through a shift of the existing freight tracks to the west at 36th Street. This shift accommodates the proposed CRISP project and allows adequate separation between the freight and light rail tracks, while preserving the historic buildings along the east side of the corridor.

- CATS Trade Street Streetcar Corridor (8): CATS proposes the Charlotte Streetcar Project as part of the *2030 Transit Corridor System Plan* and it will serve Center City Charlotte and provide connectivity to surrounding communities and institutions. The proposed streetcar line will run 10 miles along Beatties Ford Road near I-85 through Center City along Trade Street (stopping at Gateway Center), traveling up Elizabeth Avenue by Central Piedmont Community College (CPCC), and out to Central Avenue at Eastland Mall. Portions of the track have already been installed on Elizabeth Avenue and the Charlotte City Council approved spending $4.5 million in 2009 to design part of the line.
- Martin Luther Boulevard Extension (9): The City of Charlotte proposes the extension of Martin Luther King Boulevard under the existing rail corridor in Center City.
- Clanton Road Extension (10): The City of Charlotte also proposes to construct a grade separation of Donald Ross Road/Clanton Road over the rail corridor.
- NS Intermodal Facility (11): Norfolk Southern plans to relocate their Intermodal Yard, located just east of North Brevard Street, to an area near Charlotte-Douglas International Airport. It is anticipated that the intermodal yard will be relocated to the airport to provide quick and easy transfers between air cargo and freight. As a result, the City of Charlotte intends to acquire the existing intermodal yard property and use a portion of it for a CATS Vehicle Light Maintenance Facility (VLMF). The entire site is not needed for the proposed light rail facilities and the remaining portions will be used for redevelopment opportunities through the City of Charlotte.
- CSX Intermodal Facility (12): CSX plans to expand its Charlotte intermodal facility, located northwest of Center City on Hovis Road. The investment will double the Charlotte terminal's capacity.
- New CATS Flyover (13): CATS proposes a rail flyover structure south of Craighead Road for the LYNX BLE that will cross the NS freight tracks and NCDOT North End Passenger Bypass tracks.
- 36th Street Grade Separation Project (14): As part of the Light Rail Alternative, CATS proposes to grade-separate 36th Street and the rail tracks by depressing 36th Street beneath the rail tracks.
- 36th New NS/ACW Connection (15): NCDOT proposes to relocate the NS/Aberdeen Carolina and Western RR connection track from East 30th Street to Sugar Creek Road. This will eliminate the need for a LYNX BLE flyover at East 30th Street.
- Craighead Road Closure (16): The Craighead Road at-grade crossing will no longer be necessary as a result of the construction of a new grade separation at East 36th Street and Sugar Creek Road. It has yet to be determined who will be responsible for the closing of this crossing on Craighead Road.
- Sugar Creek Road Grade Separation Project (17): This project is included in the 2009-2015 TIP. The project will grade separate the rail crossing by depressing Sugar Creek Road under the freight tracks. CATS is coordinating with NCDOT Rail and NCRR so that the light rail crossing is accommodated by this project. This project allows the Sugar Creek Station to be on the bridge, which will be at-grade with surrounding land use, improving visibility and access.
- Eastway Drive Modifications or Replacements (18): The LYNX BLE would require the modification of the existing Eastway Drive overpass to accommodate the construction of light rail tracks west of existing NS tracks. NCDOT plans call for the construction of a new Eastway Drive overpass on a new alignment to accommodate the LYNX BLE tracks, the NS tracks and the future freight/passenger tracks. It has yet to be determined who will be responsible for this project (NCDOT Rail Division, Charlotte Railroad Improvement and Safety Program Presentation, October 2009).

4.3.3.3 Other Local Projects

Development activity in the Northeast Corridor is increasing as the corridor provides a vital link between two major activity centers in the area (Center City and University City). Center City Charlotte has seen a significant amount of development in the last decade consisting primarily of office, retail and residential uses. University City has likewise seen a considerable amount of development activity in all sectors, including office, retail, commercial and residential (single-family and multi-family) uses.

- Northeast Corridor Infrastructure Program (NECI): The City of Charlotte has initiated this program of infrastructure improvements, which are intended to support and encourage future development in the Northeast Corridor. The program will include intersection enhancements, improved connectivity, streetscapes, sidewalks and bicycle routes. Implementation of these improvements will enhance access to neighborhoods and businesses and promote transit-oriented development in station areas. The program will be similar to the South Corridor Infrastructure Program (SCIP) implemented in parallel with the South Corridor Light Rail Project.
- Charlotte Research Institute (CRI): The Charlotte Research Institute campus covers 102 acres of land on UNC Charlotte's grounds and currently contains eight buildings. Construction is underway for a ninth building for Bioinformatics and construction will soon begin on three additional buildings for engineering research and education.
- UNC Charlotte Master Plan: To accommodate increased student enrollment and the expanded educational mission of UNC Charlotte, a campus master plan has been developed that outlines significant expansion needed to accommodate future growth. Expanded academic, administrative and student support space will result in the addition of nearly two million square feet of facilities in the campus core. An additional 275,000 square feet of development is expected for student fitness, health education and recreational support. A conference center and hotel and a 40,000 square foot visitor's center are also included.
- Rezoning Requests: The Planning Department has received numerous requests for rezonings in the corridor since 2006. Table 3-1 provides a list of rezoning requests within the study area approved by the Charlotte City Council from 2006-2009. These approved rezonings are illustrated in Figures 5a-b. There were 64 approved rezoning cases in the project corridor since 2006. Eleven of those cases consisted of requests to rezone industrial properties to high density residential or mixed-use zoning classifications. Ten cases consisted of requests to increase residential zoning to a higher density or mixed use. The number of requests for rezonings in the corridor demonstrates that the corridor has and continues to attract development/redevelopment potential and interest. Furthermore, these incremental projects demonstrate the continuing transition of the corridor, with a major regional activity center and a vital regional connection to other activity centers and corridors.

Table 4-5
Approved Rezonings in the Northeast Transit Corridor, 2006-2009

MAP ID	PETITION NUMBER	PREVIOUS ZONING	APPROVED ZONING	SPA	SITE ACRES	APPROVAL DATE	APPLICANT	LOCATION	PURPOSE	PID
1	2007-088	UMUD		NO	11.33	7/16/2007	SPECTRUM INVEST-MENT SERVICES	S. MCDOWELL ST BETWEEN 2ND AND 3RD	ALLOW A MIXED USE COMPLEX	12507120, 12507125
2	2008-095	UMUD-O	UMUD-SPA	YES	1.29	7/21/2008	RBC CORP/ CHILDRESS KLEIN	W 1ST STREET BETWEEN CHURCH ST AND S TRYON ST	DESIGN STANDARD ASSISTANCE FOR THE BETCHLER MUSEUM	07303107
3	2007-136	UMUD	UMUD-O	NO	8.42	9/17/2007	MECKLENBURG COUNTY	BLOCK BOUNDED BY W MARTIN LUTHER KING JR BV, S GRAHAM ST, S MINT ST AND W 4TH ST	IMPROVE VEHICULAR MANEUVERING AND ALLOW ACCESS TO PROPOSED BASEBALL PARK SERVICE AREA	07311205, 07311104
4	2007-107	UMUD	UMUD-O	NO	5.60	10/17/2007	LINCOLN HARRIS, LLC	NW CORNER OF N COLLEGE ST AND E TRADE ST	ADDRESS IMPROVEMENTS ASSOCIATED WITH CONSTRUCTION OF RITZ CARLTON AND FOUNDERS HALL FACADE	08001203
5	2006-031	UMUD	UMUD-O	NO	1.12	3/20/2006	BOULEVARD CENTRO, LLC	SW OF E 7TH ST AND SE OF N CALDWELL ST	RELOCATE UTILITY LINES INSTEAD OF BURRYING THEM	08005601
6	2007-040	UR-2	MUDD(CD)	NO	1.19	4/21/2008	THE BOULEVARD CO, LLC	W SIDE OF N CEDAR ST BETWEEN W 5TH ST AND CATES ST	ALLOW 250 MAX RESIDENTIAL UNITS AND 5,000 SF OF RETAIL	07814117
7	2007-111	MUDD-O	MUDD-O	NO	3.54	1/22/2008	FIRST WARD SQUARE ASSOC	NW CORNER OF N GRAHAM ST AND WEST 8TH ST	AMEND SITE PLAN TO ALLOW INCREASE TO 550 RES. UNITS AND UP TO 30,000 SF	07807501
8	2009-006	I-1, I-2	UR-2 (CD)	NO	13.57	3/19/2009	NODA TIDEWATER DEVELOPMENT, LLC	SW CORNER OF E CRAIGHEAD RD AND PHILEMON AVE	ALLOW 300 APARTMENTS	09111208
9	2007-051	MUDD(CD)	MUDD(CD) SPA	YES	6.41	6/18/2007	VICTORIA LAND CO, LLC	NE CORER OF SEIGLE AVE AND E 10TH ST	INCREASE THE FAR PERMITTED	n/a
10	2006-092	MUDD(CD)	MUDD-O	NO	1.86	9/18/2006	CROSLAND/ CHA	BETWEEN N BREVARD, N CALDWELL, E 12TH AND E 13TH	ALPHA MILLS-ALLOW ADD. PARKING	VARIOUS
11	2009-031	R-5, B-1	UR-3(CD)	NO	0.68	7/20/2009	ROGER AND PERINA STEWART	N CORNER OF BELMONT AVE AND ALLEN ST	16 ACTIVE ADULT UNITS AND 5,600 SF RETAIL/OFFICE	VARIOUS
12	2006-097	I-2	MUDD(CD)	NO	2.14	10/18/2006	CENTER CITY CLIMATE CONTROLLED STORAGE LLC	N DAVIDSON ST, 15TH ST AND 16TH ST	150 MF CONDOS AND 20,000 SF RETAIL	08106607
13	2006-029	I-2	MUDD-O	NO	0.47	3/20/2006	THEODORE GREVE	CORNER OF N. TRYON ST AND 15TH ST	PERMIT CONSTRUCTION OF AN ADDITIONAL OFFICE BLDG TO CONNECT TO EXISITNG BLDG	07811702, 07811703
14	2008-070	I-2	MUDD-O	NO	3.63	11/17/2008	NODA @ 27TH STREET, LLC	BLOCK BOUNDED BY N DAVIDSON ST, E26TH ST, E27TH STREET AND YADKIN AVE	150 SALE/LEASE RESIDENTIAL UNITS AND UP TO 51,000 SF RETAIL/OFFICE/ RESTAURANT	08305501
15	2008-130	R-5	MUDD-O	NO	0.20	12/15/2008	ISSA L. RAFIDI	NW CORNER OF N DAVIDSON ST AND CHARLES AVE	CONVERT EXISTING HOME TO RESTAURANT AND CATERING BUSINESS	08306812
16	2008-050	R-5	UR-1(CD)	NO	1.91	5/19/2008	LIBERATE FINANCIAL, LLC	N SIDE OF CHARLES AVE BETWEEN YADKIN AVE AND N MCDOWELL ST	ALLOW UP TO 11 SF DETACHED HOMES	VARIOUS
17	2008-028	B-2(CD)	B-1(CD)	NO	0.39	3/17/2008	MICHAEL MELTON	NE CORNER OF THE PLAZA AND SHAMROCK DR	ALLOW RETAIL AUTOMOTIVE SHOP	09309201
18	2008-082	I-2	UR-3(CD)	NO	15.99	11/17/2008	FIRST INDUSTRIAL B&L, LLC	E SIDE OF MATHESON AVE BETWEEN N TRYON ST AND RAILROAD	REVISE PLAN TO ALLOW 327 TOWNHOMES AND FLATS AND 44,000 SF OPTIONAL RETAIL	08302101, 08303115

Table 4-5 (continued)
Approved Rezonings in the Northeast Transit Corridor, 2006-2009

MAP ID	PETITION NUMBER	PREVIOUS ZONING	APPROVED ZONING	SPA	SITE ACRES	APPROVAL DATE	APPLICANT	LOCATION	PURPOSE	PID
19	2007-046	I-2	MUDD(CD)	NO	10.10	5/21/2007	GATEWAY HOMES, LLC	W SIDE OF BREVARD ST BETWEEN MATHESON AVE BRIDGE AND E 36TH STREET	ALLOW UP TO 620 RESIDENTIAL UNITS	08303101
20	2008-012	I-2	MUDD	NO	0.54	2/18/2008	MERRIFIELD PARTNERS, LLC	S SIDE OF E35TH ST BETWEEN N DAVIDSON ST AND THE RAILROAD	ALLOW SELECT RETAIL, BUSINESS, SERVICE, INSTITUTIONAL OR OFFICE USES	08308409 (PO)
21	2006-046	NS	MUDD-O	NO	0.45	4/17/2006	FAT CITY INVESTMENTS	CORNER OF N. DAVIDSON ST AND 35 ST	38,000 SF OF MIXED U SE INC. 8,000 SF OF COMMERCIAL AND 21 MULTI-FAMILY UNITS	08308406, 08308407
22	2007-091	NS	MUDD-O	NO	0.36	9/17/2007	LAT PURSER & ASSOCIATES	SW CORNER OF E 35TH ST AND YADKIN AVE	RENOVATE EXISTING BUILDING AND ADD NEW ONE WITH UP TO 20 MF RESIDENTIAL UNITS	08308304
23	2006-071	R-5	UR-1(CD)	NO	1.34	7/17/2006	NORTH DAVIDSON PARTNERS	NW OF N MCDOWELLAND E 35TH ST INTERSECTION	10 SINGLE-FAMILY LOTS	08308704, 08308713, 08308705
24	2007-069	R-5	UR-1(CD)	NO	0.09	6/18/2007	L TOONS	S SIDE OF 36TH ST BETWEEN CHARLES AVE AND WHITING	SF LOT	08312505
25	2008-057	B-1	NS	NO	0.17	1/26/2009	MICHELLE NORKETT STRAUSE	S SIDE OF E36TH ST BETWEEN N DAVIDSON ST AND RAILROAD	ADDRESS DECK NONCONFORMITY	08308419
26	2008-004	R-5	MUDD-O	NO	3.87	3/17/2008	NORTH DAVIDSON ACQUISITIONS	NE CORNER OF N DAVIDSON ST AND E 36TH ST	ALLOW UP TO 160 RESIDENTIAL UNITS AND 42,000 SF OF NON RESIDENTIAL	09110203
27	2007-120	R-5	R-6(CD)	NO	0.69	11/19/2007	BUNGALOW DESIGNS, INC	SE CORNER OF N MCDOWELL ST AND E 37TH ST	FOUR SF RESIDENTIAL UNITS	09110509
28	2007-087	R-5	R-6(CD)	NO	0.49	2/18/2008	AMY CARVER	SE CORNER OF SPRATT ST AND E 37TH ST	ALOW 2 SF DETACHED LOTS	09109130
29	2007-093	INST(CD)	INST	NO	17.32	7/16/2007	CHARLOTTE-MECKLENBURG SCHOOLS	N SIDE OF N TRYON ST AND WEST SIDE OF CRAIGHEAD RD	HIGHLAND RENAISSANCE ACADEMY-ADD MOBILE UNITS	08503103
30	2009-003	UR-2	MUDD(CD)	NO	2.35	7/20/2009	CHARLOTTE HOUSING AUTHORITY	W CORNER OF E 10TH ST AND SEIGLE AVE	ALLOW 40,000 OFFICE BUILDING OR TOWNHOMES	08108612, 08108621
31	2006-114	I-2	R-5	NO	0.18	10/18/2006	ELLIOT COX	S SIDE OF WARP ST	ALLOW SF RESIDENCE	09110710
32	2007-062	MUDD-O	MUDD-O	YES	11.11	6/18/2007	BONTERRA BUILDERS	NE CORNER OF HERRIN AVE AND SPENCER ST	STEEL GARDENS-ADD 36 RESIDENTIAL UNITS	09109166, 09109164, 09109152, 09109150
33	2007-049	R-5	UR-1(CD)	NO	0.47	6/18/2007	GREENLEAF DEVELOPMENT, LLC	S SIDE OF SPENCER ST BETWEEN HERRIN AVE AND ACADEMY ST	ALLOW THREE SF FLAG LOTS	09109519
34	2007-089	R-5	R-8(CD)	NO	0.45	9/17/2007	ISSA RAFIDI AND MARK BASS	NE CORNER OF OAKWOOD AVE AND ANDERSON ST	SUBDIVIDE TWO EXISTING LOTS TO CREATE A NEW SF LOT	09106101, 09106102
35	2007-144	I-2	MUDD(CD)	NO	0.71	2/18/2008	BBC DEVELOPMENT, LLC	SW CORNER OF N DAVIDSON ST AND ANDERSON ST	ALLOW UP TO 95,000 SQ FT BLDG WITH REATIL AND RESIDENTIAL USES	09110906
36	2006-086	B-2(CD)	B-2(CD)	YES	5.00	7/17/2006	DCM PROPERTIES LLC	NE CORNER OF N TRYON ST AND NORTHCHASE DR	INCREASE ALLOWABLE SF FO REPLACEMENT SUZUKI DEALERSHIP	08912108
37	2007-020	I-1(CD)	I-2(CD)	NO	2.80	3/19/2007	JAMES KNUCKLES, LLC	S SIDE OF GENERAL INDUSTRIAL RD S OF OLD CONCORD	ALLOW UP TO 20,000 SQ FT OFFICE AND STORAGE FACILITIES WITH OUT DOOR EQUIPMENT	09722311
38	2006-121	R-4	I-1(CD)	NO	2.40	1/16/2007	JANET L. BICKETT AND JOHN EARLS	NE CORNER OF N GRAHAM ST AND ONEIDA ROAD	ALLOW LIGHT INDUSTRIAL/WAREHOUSE USES EXCL AUTOMOTIVE SALES, HOTELS OR MOTELS	04509111, 04509112

Table 4-5 (continued)
Approved Rezonings in the Northeast Transit Corridor, 2006-2009

MAP ID	PETITION NUMBER	PREVIOUS ZONING	APPROVED ZONING	SPA	SITE ACRES	APPROVAL DATE	APPLICANT	LOCATION	PURPOSE	PID
39	2008-023	BP	I-1(CD)	NO	28.70	3/17/2008	CHARLOTTE TRUCK CENTER	NW CORNER OF EQUIPMENT DR AND JEREMIAH BLVD	ALLOW LIMITED COMMERCIAL USES IN ADDITION TO EXISTING BUILDING	04701132, 04701135, 04701134
40	2008-084	INST(CD)	INST(CD)	YES	110.95	9/15/2008	NORTHSIDE BAPTIST CHURCH	EQUIPMENT DR BETWEEN JEREMIAH RD AND MINERAL SPRINGS RD	ALLOW CELL TOWER	04701120
41	2007-031	R-17MF	NS	NO	4.40	10/17/2007	TRIBEK PROPERTIES	NE CORNER OF W SUGAR CREEK AND MINERAL SPRINGS RD	NEIGHBORHOOD SERVICES CENTER	04703210, 04703214, 04703215
42	2008-083	R-4	INST(CD)	NO	1.34	7/21/2008	WILLIAM T BRANDON	NE CORNER OF THE PLAZA AND BARRINGTON DR	EXPAND EXISTING CHILDCARE CENTER	09708216
43	2006-118	I-1	R-6(CD)	NO	19.31	1/16/2007	CAPITAL LAND PARTNERS, LLC	OLD CONCORD RD	ALLOW 84 SF-DETACHED HOMES	04903208
44	2006-155	I-1	MUDD-O	NO	29.17	5/21/2007	CRESCENT RESOURCES	NE CORNER OF I-85 AND CITY BLVD	IKEA	04746101 (PO), 04722133
45	2008-059	RE-1	CC	NO	170.00	5/19/2008	CRESCENT RESOURCES	E SIDE OF I-85 AND CITY BLVD INTERCHANGE	PED FRIENDLY MU DEVELOPMENT INCLUDING OFFICE, HOTEL AND HOMES	VARIOUS
46	2008-021	B-1(CD)	B-1(CD)	YES	7.53	3/17/2008	KSJ DEVELOPMENT	SW CORNER OF HAMPTON CHURCH ROAD AND WASHINGTON BLVD	REALLOCATE PERMITTED NON-RESIDENTIAL SQUARE FOOTAGES	04940106
47	2006-096	O-2 CD,B-2 CD	B2(CD) 0-2(CD)	YES	41.20	9/18/2006	PHILLIPS DEVELOPMENT AND REALTY, LLC	W SIDE OF MCCULLOUGH DR S OF WT HARRIS	ADD 400 RES UNITS, 4000000 SF OFFICE, 30,000 SF COMMERCIAL AND A HOTEL TO SITE PLAN	04721205
48	2008-003	R-12(CD)	INST(CD)	NO	3.83	3/17/2008	RIMANIAN BAPTIST CHURCH OF CHARLOTTE	NE CORNER OF FAIRES FARM RD AND KATHERINE KIKER RD	ALLOW CHURCH AND RELATED OFFICES	05129317, 05137201
49	2008-066	CC	CC	YES	6.50	6/17/2008	FINANCIAL ENTERPRISES III, LLC	NW CORNER OF N TRYON ST AND W WT HARRIS BV	PROVIDE ADDITIONAL PARKING AND ENHANCE BUILDING UTILIZATION	04727103, 04727401, 04727411
50	2006-139	NS	NS	YES	4.80	10/18/2006	DAVID M. CAMPBELL	E SIDE OF DRIWOOD COURT BETWEEN MALLARD CREEK RD AND PROSPERITY CHURCH RD	AMEND PLAN TO SUB 11,500 SF OFFICE WITH RETAIL/RESTAURANT W/O INCREASING THE OVERALL SF OF 37,800	02936201, 02936202, 02936203, 02936204
51	2007-066	O-1(CD)	NS	NO	1.73	6/18/2007	DICKERSON REALTY CORP	W MALLARD CREEK CHURCH RD BETWEEN DAVID TAYLOR DR AND CLAUDE FREEMAN DR	ALLOW 18000 SQ FT RETAIL, OFFICE OR RESTAURANT	02901108, 02901109
52	2007-032	MUDD-O	R-12MF(CD)	NO	8.85	4/16/2007	BEAZER HOMES	NE CORNER OF W MALLARD CREEK CHURCH RD AND SENATOR ROYALL DR	ALLOW UP TO 70 TOWNHOMES	02901127, 02901133
53	2008-087	CC	CC	YES	27.20	7/21/2008	PINNACLE POINT DEVELOPMENT, LLC	NW CORNER OF W MALLARD CREEK CHURCH RD AND BERKLEY PLACE DRIVE	ALLOW UP TO 58,000 SF RETAIL, 200,000 SF OFFICE AND SELF STORAGE FACILITY	04718107, 04718143, 04718142
54	2009-042	CC	MUDD-O	NO	24.00	7/20/2009	LINCOLN HARRIS LLC	SW CORNER OF US29 N AND MALLARD CREEK CHURCH RD	BANK OF AMERICA OFFICE PARK W/UP TO 1,000,000 SF	04744102
55	2008-078	INST	R-17MF(CD)	NO	8.12	7/21/2008	WP EAST ACQUISITIONS, LLC	N SIDE OF MALLARD CREEK CHURCH RD BETWEEN STONE QUARRY RD AND BONNIE CONE LN	136 MF UNITS	05140102, 05140106, 05140104, 05140107
56	2008-153	B-1(CD)	B-2(CD)	NO	2.09	1/26/2009	SAMS MART, LLC	NE CORNER OF UNIVERSITY BLVD AND SAMS LN	SAMS MART-ALLOW CAR WASH AND CONVENIENCE STORE	05101120

Table 4-5 (continued)
Approved Rezonings in the Northeast Transit Corridor, 2006-2009

MAP ID	PETITION NUMBER	PREVIOUS ZONING	APPROVED ZONING	SPA	SITE ACRES	APPROVAL DATE	APPLICANT	LOCATION	PURPOSE	PID
57	2006-082	O-1(CD)	O-1(CD)	YES	2.50	7/17/2006	MERRIFIELD PARTNERS/VALUE PLACE LLC	N SIDE OF MALLARD OAKS DR	RECONFIG. EXISTING CU AND ADD 17 ADDITIONAL HOTEL ROOMS	02902213
58	2006-021	R-3	R-12MF(CD)	NO	1.12	3/20/2006	YOUNG PROPERTIES	JOHN ADAMS RD	PROVIDE PED AND VEHICULAR ACCESS FROM MALLARD GLEN APTS TO JOHN ADAMS RD	02965105
59	2007-079	B-1(CD), R3, B1	NS	NO	74.40	11/19/2007	CHARTER/ CAMBRIDGE PROPERTIES	N TRYON ST AT PAVILLION BLVD	ALLOW 304 MF UNITS AND UP TO 100.000 SQ FT RETAILA ND SERVICE USES	05141103, 05141104
60	2007-143	R-3	NS	NO	0.93	1/22/2008	GATEWAY HOMES, LLC	NW CORNER OF PAVILLION BLVD AND N TRYON ST	ALLOW 10,000 2 STORY OFFICE BUILDING	02905215, 02905216
61	2007-047	B-1, R-12 MF	NS	NO	2.94	1/22/2008	GATEWAY HOMES, LLC	NE CORNER OF N TRYON ST AND PAVILLION BLVD	ALLOW NEIGHBORHOOD RETAIL CENTER	02905217, 0297198
62	2007-037	CC	INST(CD)	NO	12.88	5/21/2007	CHARMECK BOARD OF EDUCATION	W SIDE OF SALOME CHURCH RD S OF MALLARD CREEK RD	FUTURE SCHOOL FACILITY	02910102 (po), 02910101
63	2007-004	R-3	INST(CD)	NO	26.63	3/19/2007	FREEDOM HOUSE CHURCH	E SIDE OF SALOME CHURCH RD S OF MALLARD CREEK RD	CHURCH WITH OFFICE AND MINISTRY FACILITIES	02955106, 02955107
64	2006-045	O-1(CD)	NS	NO	68.90	10/18/2006	GEORGE SHIELDS/ TREVI	S OF HWY 29 NEAR CABARRUS CO LINE	GREYSON RIDGE- MIXED USE W/110,000 SQ FT RETAIL, 30K SQ FT OFFICE 90 RM HOTEL 141 TOWNHOMES AND 339 MULTIFAMILY UNITS	05108126, 05109109, 05109110, 05109110, 05109111, 05109112

Note: Table contains approved rezoning within the Northeast Corridor from 1/1/2006 through 8/1/2009

4.3.3.4 Investment Activities

Economic Development investments in the *FY2009-FY2013 Capital Investment Plan* (adopted June 9, 2008) that could have cumulative project implications are listed in Table 3-2. Several neighborhoods within the Northeast Corridor have benefitted from public and private revitalization and investment. Additional neighborhood investments identified in the *FY2009-FY2013 Capital Investment Plan* that could have cumulative project implications are also listed in Table 3-2

Table 4-6
Investment Activities

Economic Development Investment Activities	Description
Synthetic Tax Increment Financing Projects	This program provides funding for ten development agreements: Elizabeth Avenue, Carolina Theatre, Metropolitan, Seaboard/ARK Management /NC Music Factory, IKEA, Double Oaks, Wachovia First Street Development/Cultural Facilities, Wesley Village (Bryant Park), Pope and Land Coliseum, and Merrifield/Radiator Specialty.
Business Corridors/Pedscape Infastructure	This program provides infrastructure funding for investments along distressed, inner-city business corridors. Infrastructure investments include new or restored sidewalk, storm drainage, signage, lighting, planting beds and other improvements that facilitate a more attractive and welcoming business corridor. The program also includes pedscape improvements in areas approved by City Council.
Business Corridor Revitilazation Strategy	This program provides funding for business corridor investments including property acquisition, loans, and grants. The purpose of the funding is to stimulate growth and economic development opportunities along business corridors. The priority business corridors are: Eastland, North Tryon, Beatties Ford Road, Rozzelles Ferry Road, Wilkinson Blvd./Morehead/Freedom.
Neighborhoods and Housing Investment Activities	**Description**
Affordable Housing Program	The Housing Bond Program provides funding for multifamily rental housing development, homeownership housing development, special needs housing, and land acquisition at transit station areas. The program funds are used to assist low and moderate-income households.
Community Development Block Grant (CDBG)	The CDBG is a federal award to the City of Charlotte used to: assist in relocating individuals and families displaced through housing code enforcement or other local government action, support acquisition and housing development through rehabilitation and new construction, and provide remedial education and after school daycare to low and moderate income children.
Home Ownership Made Easy (HOME) Grant	The HOME is a federal housing grant. Funding is allocated to the following: new construction, housing rehabilitation, community housing development organizations support, down payment assistance, and home purchase assistance.
Innovative Housing	The Innovative Housing Program provides funding for housing rehabilitation, down payment assistance, housing counseling, rental and utility assistance, and after school daycare. Program funds are used to assist low and moderate income families.
Neighborhood Improvement Program	The Neighborhood Improvement Program provides funding for reconstructed and new infrastructure in older neighborhoods. Project improvements include: sidewalks, curb and gutters, street trees, street lights, storm drainage and landscape improvements.
Area Plan Projects	The purpose is to implement infrastructure recommendations included in Council approved area plans. Funding will provide pedestrian enhancements, intersection improvements, vehicular mobility improvements, streetscape and beautification, connectivity, and environmental protection. Projects include: Providence/I-485, Optimist Park, Brookshire/I- 485, Thomasboro/Hoskins, Newell, Eastland, Dilworth, Rocky River, and Belmont, as well as recently-adopted plans which include Bryant Park, University City Area Plan, and Northlake.

4.3.4 Cumulative Effects

A cumulative impact assessment may be thought of as a comparison of the past, present and reasonably forseeable future condition of a specific resource and the effects that multiple actions have on the resources, ecosystems and human communities of concern. In determining potential cumulative effects, the past, present and future activities identified in Sections 4.3.1 – 4.3.3 were reviewed in conjunction with the potential project effects on notable features.

4.3.4.1 Light Rail Alternative

Cumulative Effects on Notable Environmental Features

It is reasonably foreseeable that the proposed project, combined with non-project activities, could cumulatively result in minor negative impacts to notable environmental features. However, these effects would likely occur with or without the proposed project.

- Development and infrastructure improvements with the potential to cumulatively affect water quality through erosion and stream sedimentation. Increasing non-point source pollution associated with increasing impervious surfaces and land disturbing activities.
- Cumulative water quality impacts are likely to be an issue in the northern portion of the corridor where existing development is sparse, but includes vacant land that would continue to be attractive for growth due to the I-485 completion.
- Habitat loss resulting from conversion of agricultural or undeveloped land to urban and suburban development. Development is expected to continue in the corridor, resulting in habitat loss and conversion of forest to urban/suburban uses.

Cumulative Effects of Multiple Actions

There are a number of projects planned that cumulatively would improve the mobility of people and goods along and through the Northeast Corridor. Combined, these actions are not likely to result in significant additional direct effects beyond those identified individually by each project. Should the construction schedules of the projects all occur within the same time period, the temporary effects from those activities could negatively affect the surrounding communities. At the present time, specific project plans and construction schedules are unknown and therefore specific construction-related cumulative effects cannot be determined. The proposed LYNX BLE is likely to be constructed close in time and place with the NCDOT's Sugar Creek Grade Separation Project. The project would either be constructed before or in conjunction with the construction of the proposed LYNX BLE.

Cumulative CATS Actions

As previously discussed, CATS has programmed major transit projects throughout the region beyond the current action described in the Draft EIS. The adopted *2030 Transit Corridor System Plan* consists of multiple transit improvements in five corridors, a series of improvements in Center City Charlotte, and bus service and facility improvements throughout the rest of the region.

The implementation of transit projects in multiple corridors as part of the development of an overall transit system plan would improve mobility and accessibility throughout the region. The development of the *2030 Transit Corridor System Plan* provides benefits to the traveling public through new services; expansion of existing services; and improved connectivity and accessibility. It also is expected to reduce dependency on auto use and reduce the associated auto-generated roadway congestion, air pollution emissions and energy consumption.

It is anticipated that the implementation of the *2030 Transit Corridor System Plan* would provide benefits on several fronts:

- Transit-dependent populations would be better served.
- More transportation choices in terms of mode, frequency, and destination.
- Linkage of low income urban communities with suburban employment centers.
- Enhancement of property valuations along the transit corridor, particularly adjacent to station areas.
- Reduction in overall emissions traditionally tied to vehicle miles of travel growth.

As noted in Section 4.3.3., retrofit improvement options for the existing LYNX Blue Line Light Rail (South Corridor) include platform extensions at stations and additional substations. The options include either:

1) 3-car train sets operating at ten minute headways – This option would necessitate extending the length of the existing 2-car platforms at each of the 15 LYNX Blue Line stations in the South Corridor and adding four additional substations to meet the traction power requirements. The environmental effects for longer station platforms and additional substations were assessed in the South Corridor Light Rail Project's Draft and Final Environmental Impact Statements. Potential impacts include noise and vibration impacts related to light rail operations, as well as impacts to natural resources related to platform and substation improvements.

2) 2-car train sets operating at six minute headways – Based on existing delays and a test run of six minute headways performed in 2008, this option has the potential to impact vehicular traffic, particularly along the segment within South Boulevard from Scaleybark Road to Clanton Road. In addition, three additional substations are needed for this six minute headway operation option.

Cumulative effects to notable resources and the affected environment are reasonably forseeable, as both projects would have their own direct and indirect effects on natural resources, traffic patterns, and the surrounding human environment (i.e. noise, visual and social effects). However, direct and indirect negative impacts to notable resources and the affected environment are not in the same study area/corridors. Furthermore, it is anticipated that overall cumulative impacts would be beneficial from a corridor system perspective. The projects, when combined would provide a benefit to the traveling public with new and expanded services; improved connectivity and accessibility; reduced dependency on auto use; and reduced roadway congestion and associated air pollution emissions and energy consumption.

A re-evaluation of the South Corridor Light Rail Project Final EIS will be completed to assess the changes to the affected environment and the potential impacts associated with retrofit options. Appropriate technical studies, including a detailed traffic analysis and measures to mitigate impacts associated with six minute headway operation, will be performed during the re-evaluation.

4.3.4.2 Light Rail Alternative – Sugar Creek Design Option

The cumulative effects for the Light Rail Alternative – Sugar Creek Design Option would be the same as those described for the Light Rail Alternative. No additional cumulative effects would result from the Light Rail Alternative – Sugar Creek Design Option.

4.4 Commitment of Resources

4.4.1 Relationship of Local Short-Term Uses Versus Long-Term Productivity

The most disruptive short-term impact associated with the proposed project would occur during land acquisition and project construction (for additional detail about construction impacts, see *Draft EIS Chapter 18.0: Construction Impacts*). Any short-term uses of human, physical, socio-economic, cultural and natural resources would contribute to the long-term benefits of improved access to employment centers, a transportation alternative that can easily respond to increased demand, improvements in both transit accessibility and availability in the Northeast Corridor, and improved air quality in the region. The long-term benefits of implementing transit supportive land use policies would also be realized.

The proposed project would provide a substantial improvement to an established, overburdened transportation corridor. In addition, the proposed project would meet the City of Charlotte's and Mecklenburg County's desires to implement long-range plans that integrate land use and transportation policies.

4.4.2 Irreversible and Irretrievable Commitment of Resources

Construction of the proposed project would result in commitments of natural, physical, man-made and financial resources. While some of these resources would be recovered within a relatively short period of time, other resources would be irreversibly and irretrievably committed to the project. Fossil fuels, labor,

and construction materials such as steel, cement, aggregate, and bituminous material would be expended during construction. These materials are generally not retrievable; however, the use of these materials would not have an adverse effect upon the continued availability of these resources. Construction would also require an expenditure of federal, state and local funds, which are not retrievable.

Employment during the construction period for the proposed LYNX BLE would include 8,592 jobs, including: direct employment such as construction workers; indirect employment by businesses that provide goods and services by individuals/households due to increased income from direct or indirect employment. Operation and maintenance of the proposed LYNX BLE would add approximately 96 new jobs for rail by 2030.

The commitment of these resources is based on the recognition that residents in the area, region and state will benefit from the improved quality of the transportation system. These benefits will consist of improved accessibility and mobility, savings in time and greater availability of quality services that are anticipated to outweigh the commitment of these resources.

5.0 MITIGATION

Section 4.0 identified the secondary and cumulative effects of the alternatives under study. Where effects have been identified, mitigation must be provided. For cumulative effects, the mitigation must be appropriate to the level of contribution to the impact.

5.1 Secondary Effects

5.1.1 Light Rail Alternative

Secondary negative development effects resulting from the project would be minimized through the station area planning process, which would include public outreach to property-owners within a ½-mile of station locations, detailed in the *Draft EIS Chapter 4.0: Land Use, Public Policy and Zoning* (August 2010). Specific mitigation would be identified during that process through specific zoning recommendations to minimize effects on notable features and area neighborhoods and discourage development and redevelopment within adjacent neighborhoods located outside of the station area.

Table 5-1 includes mitigation measures recommended for each of the potential negative secondary effects identified for the Light Rail Alternative.

5.1.2 Light Rail Alternative – Sugar Creek Design Option

The secondary effects would be the same as those for the Light Rail Alternative. Therefore, no additional mitigation beyond that identified for the Light Rail Alternative would be required.

5.2 Cumulative Effects

5.2.1 Light Rail Alternative

Mitigation measures specific to notable environmental resources identified in their respective chapters within the *Draft EIS* (August 2010). In order to minimize the potential cumulative construction effects of the NCDOT Rail Division's Sugar Creek Grade Separation Project, CATS will continue to coordinate with NCDOT Rail Division regarding the project schedules and minimize neighborhood effects to the extent practicable. CATS is also coordinating the design of the LYNX BLE project with NCDOT Rail and NCRR related to accommodations for the CRISP program and High-Speed Rail plans. Construction activities occurring in the same area for these projects may be consolidated and/or closely coordinated to minimize impacts on neighborhoods and businesses in the area.

Regarding the existing LYNX Blue Line Light Rail (South Corridor), a traffic analysis and re-evaluation of the South Corridor Final EIS will be undertaken to identify specific measures to mitigate the potential impacts to the existing LYNX Blue Line.

5.2.2 Light Rail Alternative – Sugar Creek Design Option

Mitigation measures specific to the resource areas are identified in their respective chapters within the *Draft EIS* (August 2010). Therefore, no additional mitigation measures would be required for the Light Rail Alternative – Sugar Creek Design Option.

Table 5-1
Mitigation Measures for Secondary Effects

Negative Secondary Effects	Project Mitigation	Available Mitigation
Redevelopment within station areas could result in gentrification of neighborhoods and loss of affordable housing	Affordable housing strategies and preservation of existing neighborhoods to be developed with station area plans	City of Charlotte Housing Policy requires/encourages affordable units in multi-family residential development, and the Charlotte-Mecklenburg General Development Policies call for preserving and protecting existing stable neighborhoods as part of the station areas principles
Destruction or redevelopment of historic properties from development / redevelopment activities	Notification to the Landmarks Commission of National Register Eligible properties that could be designated as Local Landmarks to afford them protection	Once local landmark status is provided the following techniques can be used by the Landmarks Commission: demolition delays; certificate of appropriateness; rehabilitation code
Increased traffic and demands on infrastructure from associated development in station areas	Convenient access to light rail and bus services	A separate project program known as the Northeast Corridor Infrastructure (NECI) Program is currently underway to identify needed infrastructure improvements to support existing and future development
Public opposition to dense development patterns near neighborhoods	Public outreach/education regarding the benefits of transit supportive development; public involvement in station area plan development	Station Area Plans that incorporate neighborhood preservation principles
Water Resources and water quality	Coordination with City of Charlotte's Stormwater Services to minimize impacts to water resources and water quality during the station area planning process	NPDES permitting, enforcement of SWIM Buffers, continued implementation of policies to discourage urban sprawl and focus development into the centers and corridors

6.0 REFERENCES

Charlotte Area Transit System (CATS)

CATS. (2009). *Archeological Identification Survey of the Proposed LYNX BLE.*

CATS. (2009). *Evaluation of Effects Technical Memorandum*.

CATS. (2009). *LYNX BLE Northeast Corridor Light Rail Project Corridor FY 2011 New Starts Report.*

CATS. (2009). *Natural Resources Technical Report DRAFT.*

CATS. (2008). *CATS Blue Line Extension-Sugar Creek and North Carolina Railroad Alignment Alternatives: Market Potential Analysis.*

CATS. (2007). *Northeast Corridor LRT Corridor FY 2008 New Starts, Land Use – Table 11 and Table 12.*

CATS. (2005). Charlotte *Northeast Corridor TOD Station Analysis.*

Charlotte-Mecklenburg Planning Commission (CMPC)

CMPC. (1998). *2025 Integrated Transit/Land Use Plan.*

CMPC. (1997). *2015 Planning Our Future.*

Partners/Other

Charlotte Chamber of Commerce. (2008). *Largest Employers*. Retrieved from: www.charlottechamber.com .

City of Charlotte, CMPC and Center City Partners . (2000). *Center City 2010 Vision Plan.*

Council on Environmental Quality. (1997). *Considering Cumulative Effects Under the National Environmental Policy Act*.

Mecklenburg-Union Metropolitan Planning Organization. (2005). *2030 Long-Range Transportation Plan*.

North Carolina Department of Transportation. (2001). *Guidance for Assessing Indirect and Cumulative Impacts of Transportation Projects in North Carolina*.

North Carolina Employment Commission. (1990-2008). *Employment Distribution-Mecklenburg County, State and Charlotte MSA*. Retrieved from: www.ncesc.com/default.aspx .

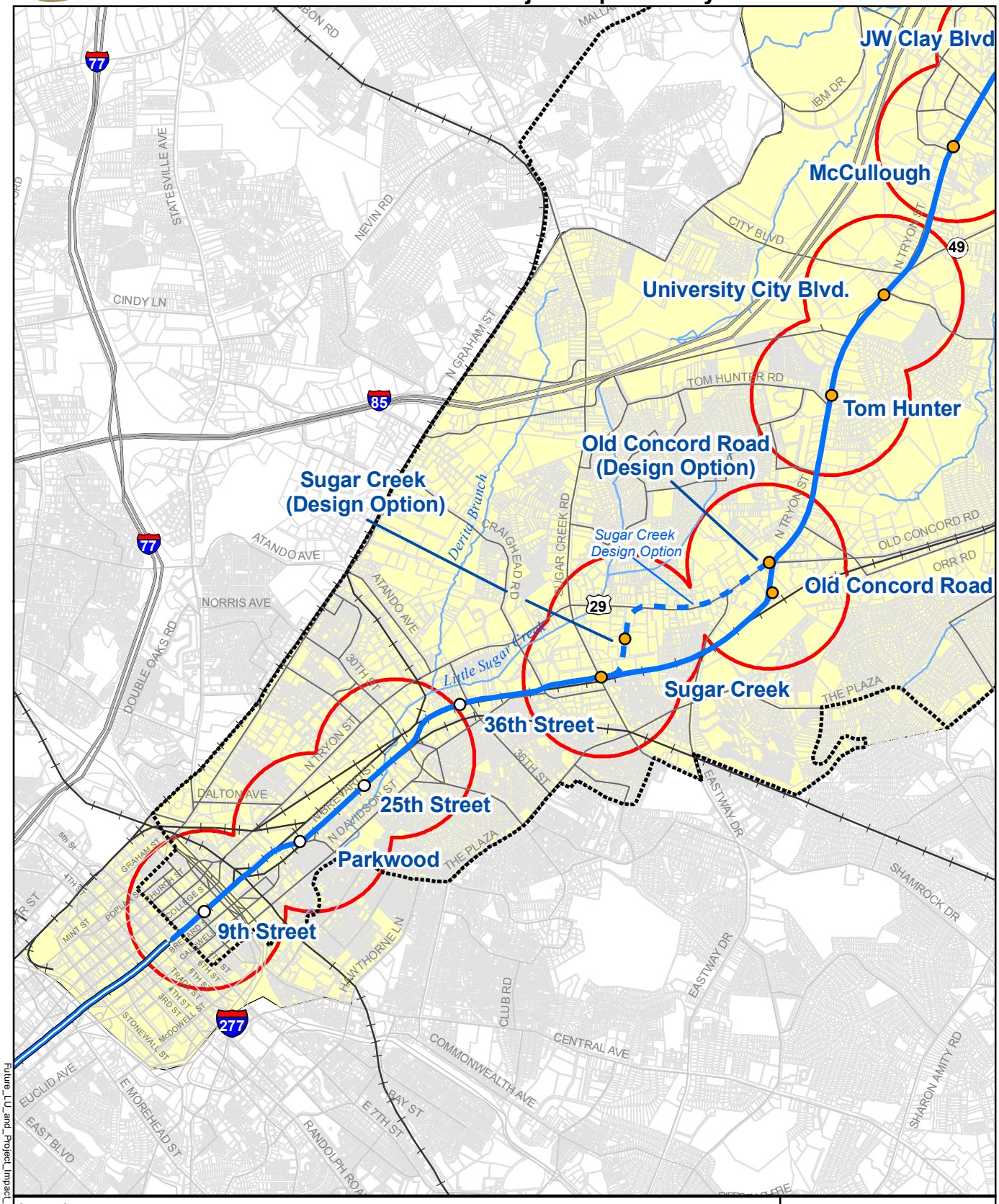
University City Partners. (2009). *Estimated Development Potential Around Five Proposed LRT Transit Stations.*

U.S. Census Bureau. (1990-2008) *American FactFinder-.Mecklenburg County, State and Charlotte MSA.* Retrieved from: www.factfinder.census.gov .

LYNX Blue Line Extension

Figure 1a

Future Land Use & Project Impact Study Areas - Southern Portion



Legend

- Northeast Corridor Limits
- Proposed Light Rail Alternative
- Design Option
- Proposed Stations
- Proposed Stations with Park-and-Ride
- Lynx Blue Line
- Highway
- Highway (Future Planned)
- Highway (Under Construction)
- Major Roads
- Railroads
- Streams
- County Line
- Project Impact Area
- Future Land Use Study Area

N

0.5 0.25 0 0.5

Miles

Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS

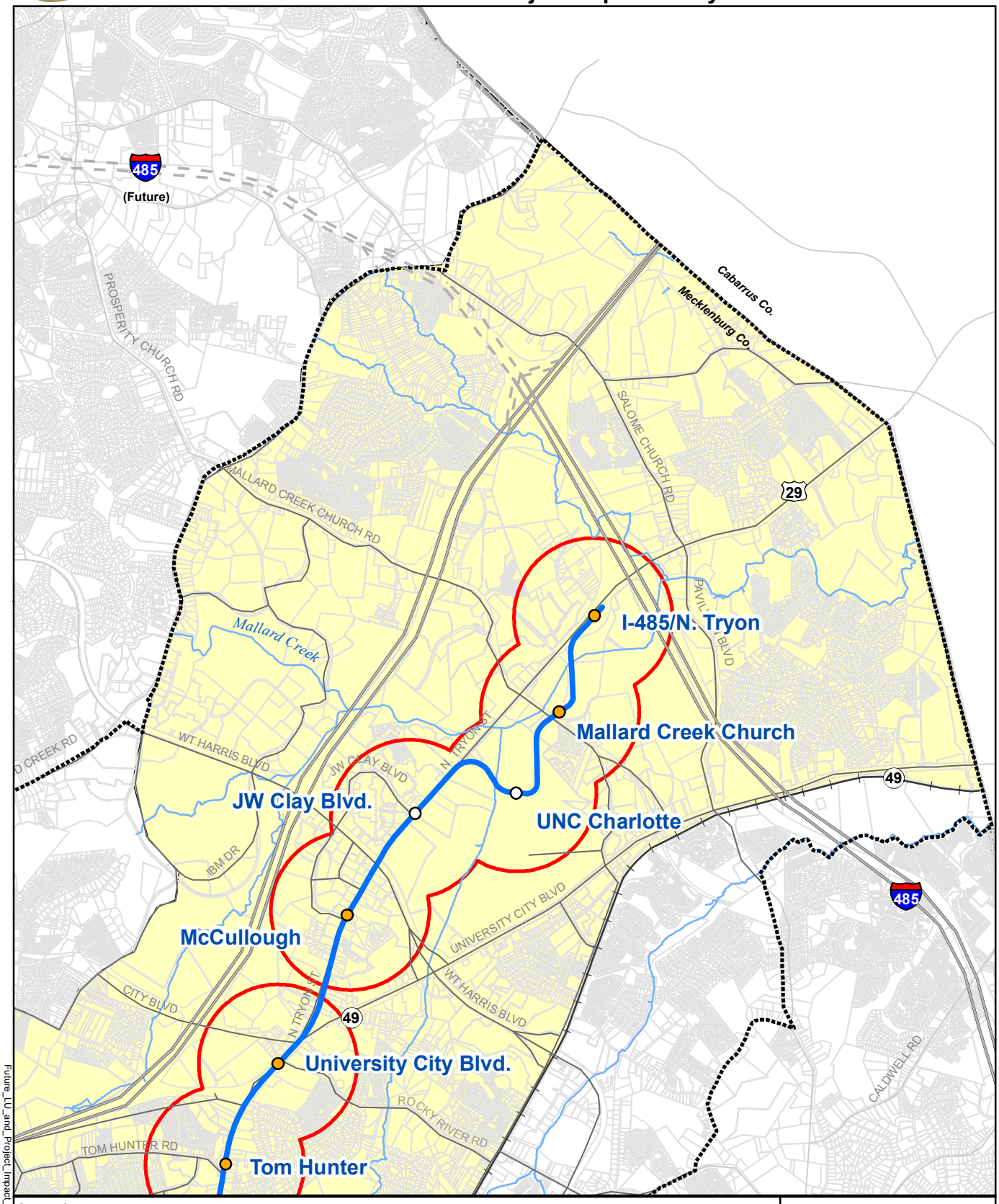
12/17/09

Future_LU_and_Project_Impact_Study_Area_Southern_CB_121709.mxd

LYNX Blue Line Extension

Figure 1b

Future Land Use & Project Impact Study Areas - Northern Portion



Legend

- Northeast Corridor Limits
- Proposed Light Rail Alternative
- Design Option
- Proposed Stations
- Proposed Stations with Park-and-Ride
- Lynx Blue Line
- Highway
- Highway (Future Planned)
- Highway (Under Construction)
- Major Roads
- Railroads
- Streams
- County Line
- Project Impact Area
- Future Land Use Study Area

0.5 0.25 0 0.5

Miles

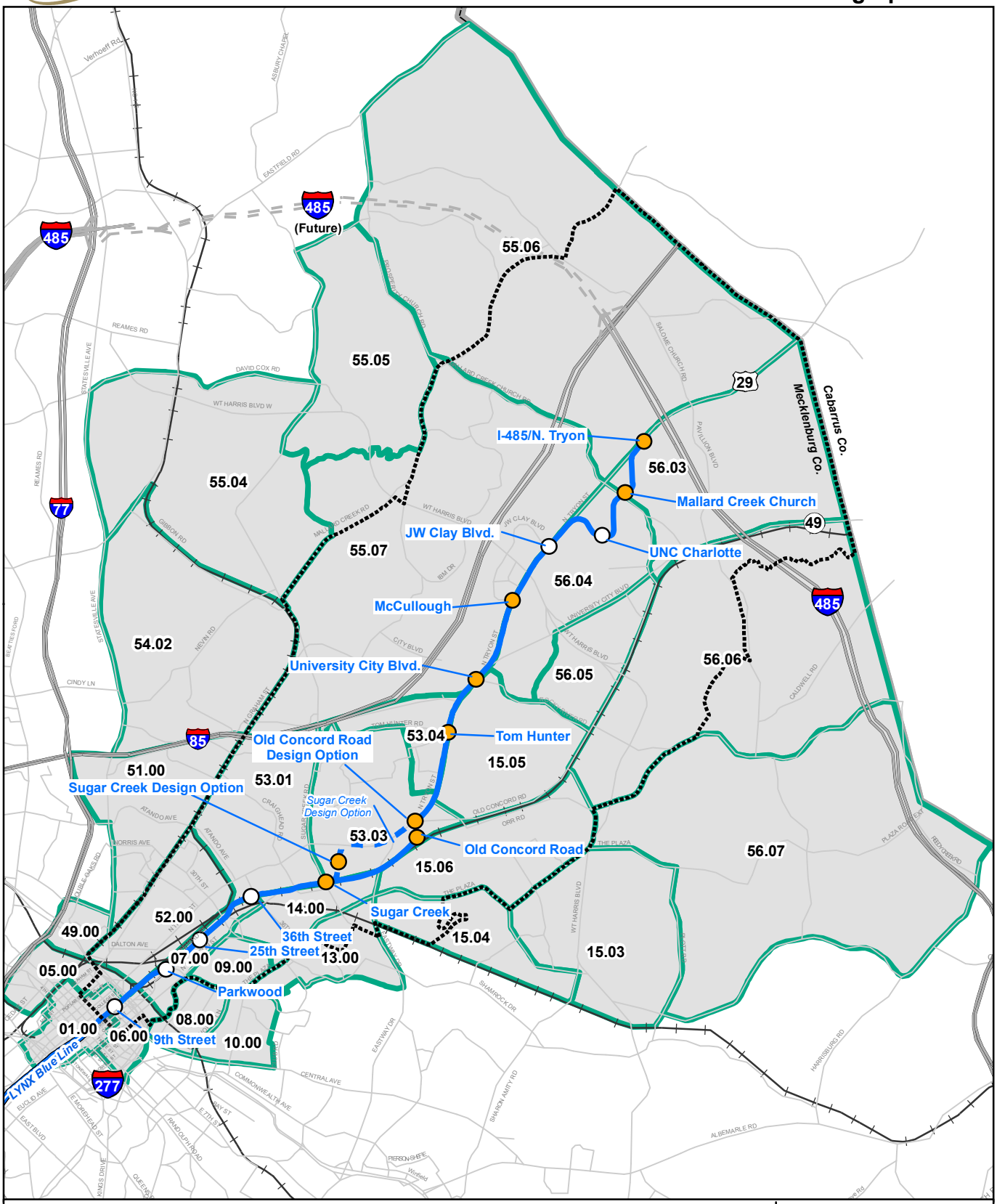
Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS

12/17/09

Future_LU_and_Project_Impact_Study_Area_Northern_CB_121709.mxd

LYNX RAPID TRANSIT SERVICES Blue Line Extension

Figure 2
Demographic Area



Legend

- Northeast Corridor Limits
- Proposed Light Rail Alternative
- Design Option
- Proposed Stations
- Proposed Stations with Park-and-Ride
- County Line
- LYNX Existing Light Rail Transit
- Highway
- Major Roads
- Highway (Future)
- Railroads
- Census Tracts (2000)

N

1 0 1

Mile

Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS

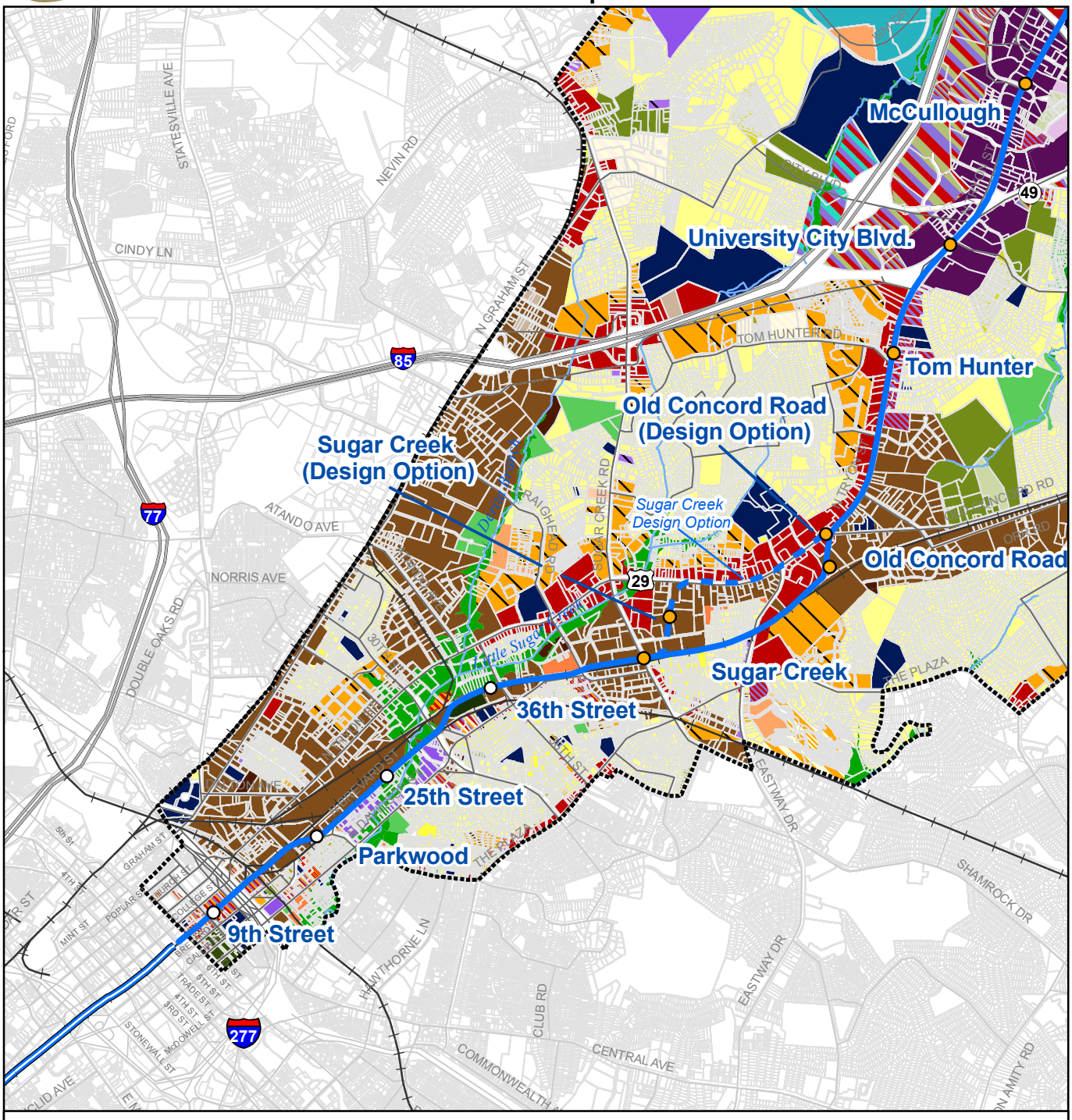
Demographic_Area_CB_120809.mxd

12/08/09

LYNX Blue Line Extension

Figure 3a

Adopted Future Land Use - Southern Portion



Future Land Use Categories

- Greenway
- Industrial
- Industrial Light
- Industrial Heavy
- Institutional
- Multi-family
- Mulit-family (12 DUA)
- Mulit-family (17 DUA)
- Multi-family (22 DUA)
- Mulit-family (25 DUA)
- Multi-family (>25 DUA)
- Single Family/Mulit-family
- Single Family/Multi-family/Institutional/Office/Retail
- Multi-family/Office
- Multi-family/Retail
- Multi-family/Office/Retail
- Research/Office/Retail
- Office/Retail
- Multi-family/Research
- Single Family/Multi-family/Institutional/Office
- Single Family/Multi-family (8 DUA)
- Office/Warehouse
- Office/Retail/Light Industrial
- Single Family/Multi-family/Office
- Single Family/Multi-family/Institutional
- Single Family/Multi-family/Retail
- Single Family/Office/Retail
- Single Family/Multi-Family/Research/Retail
- Single Family/Multi-Family/Office/Retail
- Office
- Office/Business Park
- Office/Business Park/Light Industrial
- Park/Open Space
- Research
- Residential
- Residential (12 DUA)
- Residential (17 DUA)
- Residential (22 DUA)
- Residential (4 DUA)
- Residential (5 DUA)
- Residential (6 DUA)
- Residential (8 DUA)
- Residential (>22 DUA)
- Residential
- Residential/Office/Retail
- Warehouse/Distribution
- Residential/Retail
- Retail
- Single Family (3 DUA)
- Single Family (4 DUA)
- Single Family (5 DUA)
- Single Family (6 DUA)
- Single Family (8 DUA)
- Transit Oriented Development - Mixed
- Transit Oriented Development - Residential
- Utility

Legend

- Northeast Corridor Limits
- Proposed Light Rail Alternative
- Design Option
- Proposed Stations
- Proposed Stations with Park-and-Ride
- Lynx Blue Line
- Highway
- Highway (Future Planned)
- Highway (Under Construction)
- Major Roads
- Railroads
- Streams
- County Line

N

0.5 0.25 0 0.5

Miles

Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS

12/30/09

Adopted_Future_LU_Southern_CB_123009.mxd

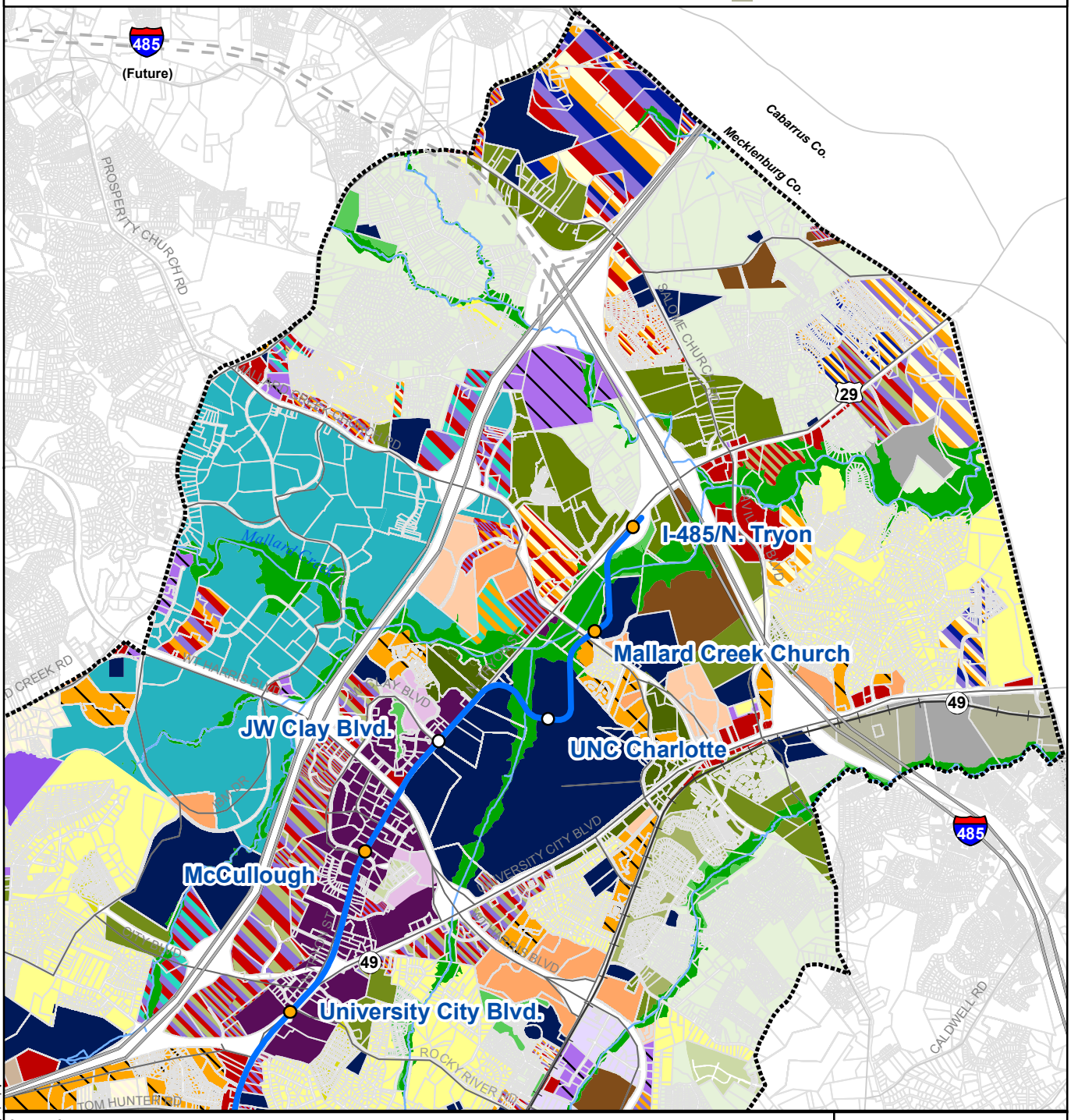
LYNX Blue Line Extension

Figure 3b

Adopted Future Land Use - Northern Portion

Future Land Use Categories

- Greenway
- Industrial
- Industrial Light
- Industrial Heavy
- Institutional
- Multi-family
- Multi-family (12 DUA)
- Multi-family (17 DUA)
- Multi-family (22 DUA)
- Mulit-family (25 DUA)
- Multi-family (>25 DUA)
- Single Family/Mulit-family
- Single Family/Multi-family/Institutional/Office/Retail
- Multi-family/Office
- Multi-family/Retail
- Multi-family/Office/Retail
- Research/Office/Retail
- Office/Retail
- Multi-family/Research
- Single Family/Multi-family/Institutional/Office
- Single Family/Multi-family (8 DUA)
- Office/Warehouse
- Office/Retail/Light Industrial
- Single Family/Multi-family/Office
- Single Family/Multi-family/Institutional
- Single Family/Multi-family/Retail
- Single Family/Office/Retail
- Single Family/Multi-Family/Research/Retail
- Single Family/Multi-Family/Office/Retail
- Office
- Office/Business Park
- Office/Business Park/Light Industrial
- Park/Open Space
- Research
- Residential
- Residential (12 DUA)
- Residential (17 DUA)
- Residential (22 DUA)
- Residential (4 DUA)
- Residential (5 DUA)
- Residential (6 DUA)
- Residential (8 DUA)
- Residential (>22 DUA)
- Residential
- Residential/Office/Retail
- Warehouse/Distribution
- Residential/Retail
- Retail
- Single Family (3 DUA)
- Single Family (4 DUA)
- Single Family (5 DUA)
- Single Family (6 DUA)
- Single Family (8 DUA)
- Transit Oriented Development - Mixed
- Transit Oriented Development - Residential
- Utility



Legend

- Northeast Corridor Limits
- Proposed Light Rail Alternative
- Design Option
- Proposed Stations
- Proposed Stations with Park-and-Ride
- Lynx Blue Line
- Highway
- Highway (Future Planned)
- Highway (Under Construction)
- Major Roads
- Railroads
- Streams
- County Line

N

0.5 0.25 0 0.5

Miles

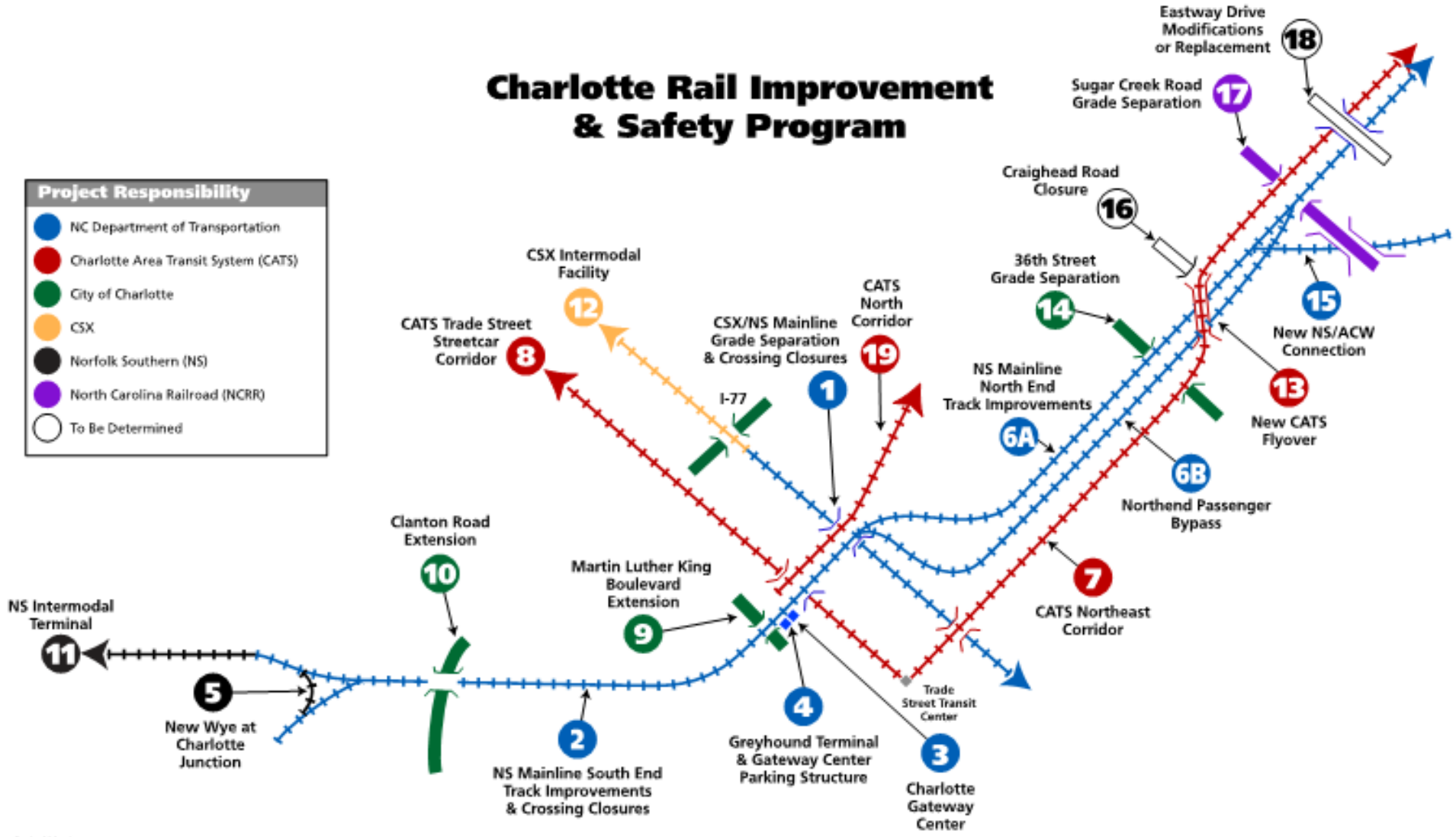
Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS

Adopted_Future_LU_Northern_CB_123009.mxd

12/30/09

LYNX Blue Line Extension

Figure 4
Proposed Charlotte Region Railroad Infrastructure Improvements



Data Source: Charlotte Department of Transportation, NCDOT Rail Division

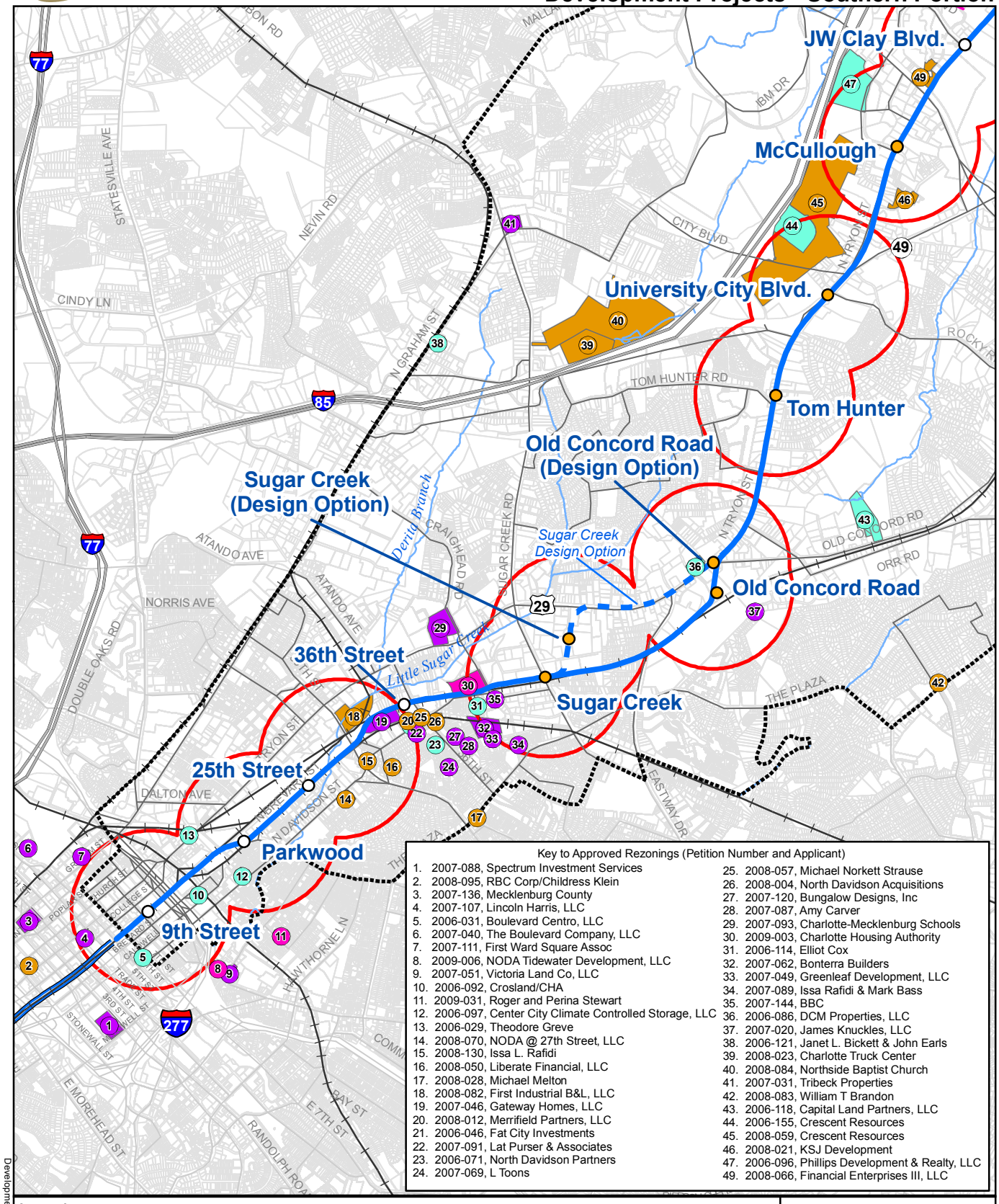
12.15.09

Charlotte Region Rail Improvements_Map.REV.00.pdf

LYNX Blue Line Extension

Figure 5a

Development Projects - Southern Portion



Key to Approved Rezonings (Petition Number and Applicant)

1. 2007-088, Spectrum Investment Services
2. 2008-095, RBC Corp/Childress Klein
3. 2007-136, Mecklenburg County
4. 2007-107, Lincoln Harris, LLC
5. 2006-031, Boulevard Centro, LLC
6. 2007-040, The Boulevard Company, LLC
7. 2007-111, First Ward Square Assoc
8. 2009-006, NODA Tidewater Development, LLC
9. 2007-051, Victoria Land Co, LLC
10. 2006-092, Crosland/CHA
11. 2009-031, Roger and Perina Stewart
12. 2006-097, Center City Climate Controlled Storage, LLC
13. 2006-029, Theodore Greve
14. 2008-070, NODA @ 27th Street, LLC
15. 2008-130, Issa L. Rafidi
16. 2008-050, Liberate Financial, LLC
17. 2008-028, Michael Melton
18. 2008-082, First Industrial B&L, LLC
19. 2007-046, Gateway Homes, LLC
20. 2008-012, Merrifield Partners, LLC
21. 2006-046, Fat City Investments
22. 2007-091, Lat Purser & Associates
23. 2006-071, North Davidson Partners
24. 2007-069, L Toons
25. 2008-057, Michael Norkett Strause
26. 2008-004, North Davidson Acquisitions
27. 2007-120, Bungalow Designs, Inc
28. 2007-087, Amy Carver
29. 2007-093, Charlotte-Mecklenburg Schools
30. 2009-003, Charlotte Housing Authority
31. 2006-114, Elliot Cox
32. 2007-062, Bonterra Builders
33. 2007-049, Greenleaf Development, LLC
34. 2007-089, Issa Rafidi & Mark Bass
35. 2007-144, BBC
36. 2006-086, DCM Properties, LLC
37. 2007-020, James Knuckles, LLC
38. 2006-121, Janet L. Bickett & John Earls
39. 2008-023, Charlotte Truck Center
40. 2008-084, Northside Baptist Church
41. 2007-031, Tribeck Properties
42. 2008-083, William T Brandon
43. 2006-118, Capital Land Partners, LLC
44. 2006-155, Crescent Resources
45. 2008-059, Crescent Resources
46. 2008-021, KSJ Development
47. 2006-096, Phillips Development & Realty, LLC
49. 2008-066, Financial Enterprises III, LLC

Legend

- Northeast Corridor Limits
- Proposed Light Rail Alternative
- Design Option
- Proposed Stations
- Proposed Stations with Park-and-Ride
- Streams
- Lynx Blue Line
- Highway
- Highway (Future Planned)
- Major Roads
- Railroads
- Project Impact Study Areas

Approved Rezonings

- # 2006 Approved Rezonings
- # 2007 Approved Rezonings
- # 2008 Approved Rezonings
- # 2009 Approved Rezonings

N

0.5 0.25 0 0.5

Miles

Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS

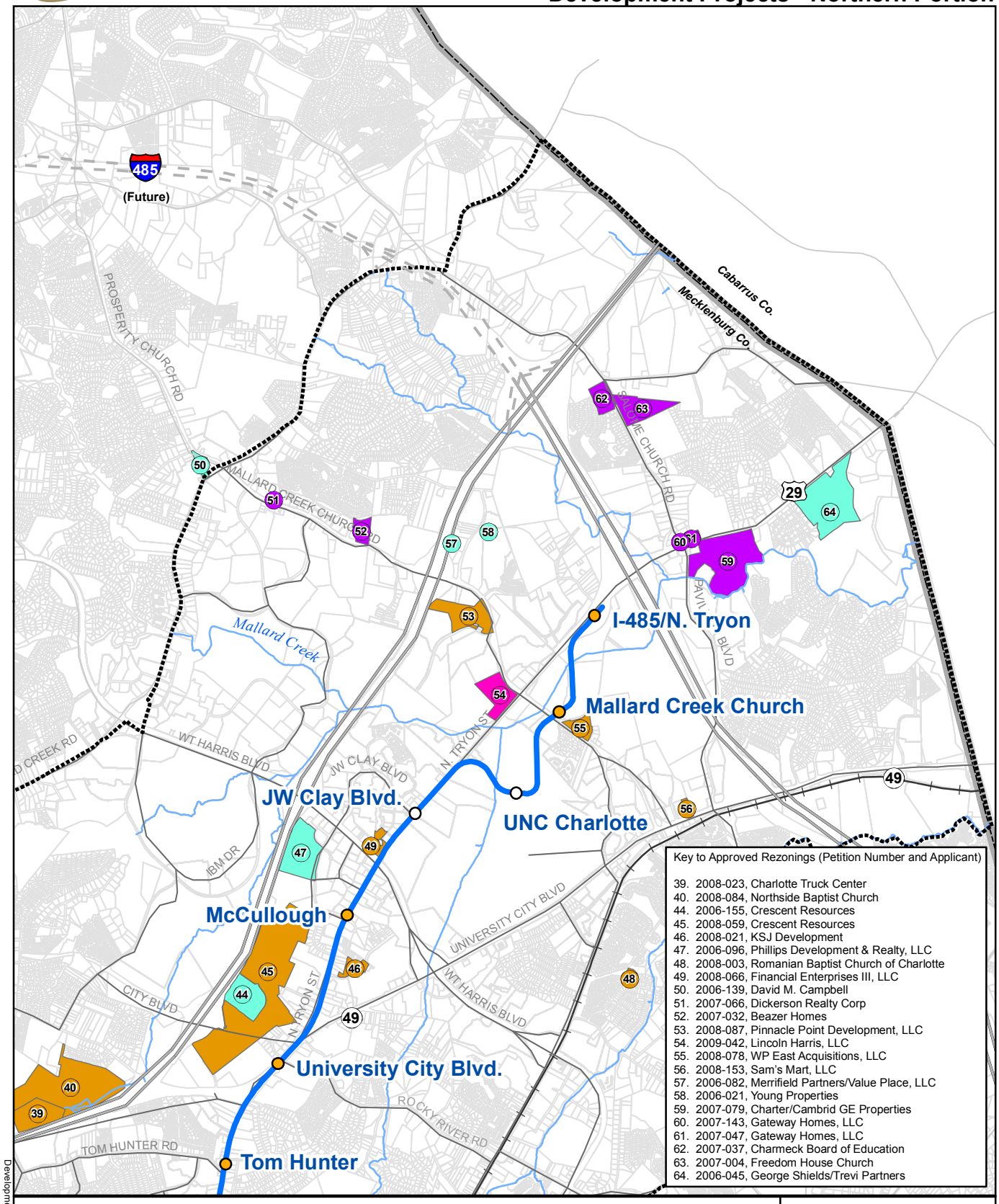
12/08/09

Development_Projects_Southern_CB_120809.mxd

LYNX Blue Line Extension

Figure 5b

Development Projects - Northern Portion



Key to Approved Rezonings (Petition Number and Applicant)

39. 2008-023, Charlotte Truck Center
40. 2008-084, Northside Baptist Church
44. 2006-155, Crescent Resources
45. 2008-059, Crescent Resources
46. 2008-021, KSJ Development
47. 2006-096, Phillips Development & Realty, LLC
48. 2008-003, Romanian Baptist Church of Charlotte
49. 2008-066, Financial Enterprises III, LLC
50. 2006-139, David M. Campbell
51. 2007-066, Dickerson Realty Corp
52. 2007-032, Beazer Homes
53. 2008-087, Pinnacle Point Development, LLC
54. 2009-042, Lincoln Harris, LLC
55. 2008-078, WP East Acquisitions, LLC
56. 2008-153, Sam's Mart, LLC
57. 2006-082, Merrifield Partners/Value Place, LLC
58. 2006-021, Young Properties
59. 2007-079, Charter/Cambrid GE Properties
60. 2007-143, Gateway Homes, LLC
61. 2007-047, Gateway Homes, LLC
62. 2007-037, Charmeck Board of Education
63. 2007-004, Freedom House Church
64. 2006-045, George Shields/Trevi Partners

Legend

- Northeast Corridor Limits
- Proposed Light Rail Alternative
- Design Option
- Proposed Stations
- Proposed Stations with Park-and-Ride
- Streams
- Lynx Blue Line
- Highway
- Highway (Future Planned)
- Major Roads
- Railroads
- Project Impact Study Areas

Approved Rezonings

- # 2006 Approved Rezonings
- # 2007 Approved Rezonings
- # 2008 Approved Rezonings
- # 2009 Approved Rezonings

N

0.5 0.25 0 0.5

Miles

Data Source:
CATS, City of Charlotte GIS, and Mecklenburg County GIS

12/08/09

Development_Projects_Northern_CB_120809.mxd